Inner City Life

A Socially Resilient Development Plan for the Inner Core of the City of Irbid

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Abstract

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Developing cities of low to middle income are undergoing especially rapid changes. This poses a great strain on urban environments to cope with change, while also offering inhabitants continued opportunity for development. The city of Irbid, in Jordan, currently faces several challenges, mainly posed by local changing demographics, and global influences of modernisation. The changes in Irbid demonstrate the connectedness of local and global effects in socio-ecological systems. To maintain its main functions and identity, a city needs to respond to change at a local level. Accordingly, that requires that society be equipped with the necessary capacities to deal with constant change, so they can adapt, and use change as an opportunity for development. This thesis highlights the importance of action at the local scale, and through an understanding of local conditions. The development of the inner core of Irbid is approached through the framework of social resilience. The thesis explores how urban design can strengthen social resilience capacities which enable societies to deal with complexities and challenges.

The thesis consists of three main parts, a theoretical study of the concept of social resilience in the urban environment, an in-depth analysis of the inner core of the city of Irbid, and finally an urban design proposal that applies the theory. The main outcome of the theoretical research is a guiding conceptual framework for urban design which aims to strengthen capacity giving assets for social resilience in urban environments. The thesis then demonstrates how the framework can be applied to a local context. Since the focus of the thesis is on building social resilience at the local scale, an ethnographic approach was undertaken for the analysis of the inner core of Irbid. The findings from the fieldtrip are analysed through the conceptual framework, in order to eventually consolidate theory and analysis through an urban design proposal.

Keywords: Social Resilience, Urban Design, Middle-East, Jordan, Developing Cities

Foreword

"Hope is an orientation of the spirit, an orientation of the heart. It transcends the world that is immediately experienced and is anchored somewhere beyond its horizons.

Hope, in this deep and powerful sense is not the same as joy that things are going well, or willingness to invest in enterprises that are obviously headed for early success, but rather an ability to work for something because it is good, not because it stands a chance to succeed.

Hope is definitely not the same thing as optimism. It is not the conviction that something will turn out well, but certainty that something makes sense regardless of how it turns out.

It is Hope, above all which gives the strength to live and continually try new things."

- Václav Havel (in Popova, 2019)

I have hope for Jordan. I have hope for its cities and for its people. The current situation is strained, but whenever I am there, and I interact with its kind people and beautiful nature, I have hope. It is the country where I grew up, and had my first insights to the world. My way of seeing the world has of course changed a lot over time. Moving to Europe has given a different dimension to how I see things, and how I relate to 'home'. Over the years, through my studies, living in different cities, engaging with so many different people, I notice that whatever new insights I get, they are always automatically set in perspective with what I know of home, what I have seen there, and what I still experience on my regular visits. It is not a comparison, but it is rather indeed hope.

This dual way of looking at life has made me wonder how cities, in particular, can work better in Jordan. What would a context and culture specific development look like, and how can I apply the knowledge I have to the particular contexts in Jordan? This lingering feeling of wishing to investigate how to approach development at home is the main drive for this thesis.

Contents

Introduction

This chapter starts by introducing the thinking behind the thesis, the global and local forces at play in urban environments. Then, the city of Irbid, in Jordan, is set into this context. It is briefly introduced, to lead to the choice of framework. Finally, I discuss the scope of the thesis, outlining the approach of urban design that enables social resilience, and explaining the methods used for tackling it at the local scale.

Global and Local Forces

The primary aim of this thesis is to explore an urban development plan for the inner core of the city of Irbid, in Jordan, under the framework of social resilience. Urban environments are in constant evolution, and face big challenges in dealing with change, while also providing their inhabitants with continued opportunities for wellbeing and development. Social resilience allows societies to persevere, adapt to change, and transform. In an ever-changing world, and the multitude of complexities and challenges that come up, this would require that society be equipped with the necessary capacities for social resilience. Because societies and their environments are constantly shaping one another, urban design plays an important role in producing environments that are enabling, and support social resilience in the face of change.

In an increasingly globalising world, people are ever more aware of the connectedness of thier environments, the natural, the built, and the life within them. Globalisation is affecting cultures, societies, and economies, manifesting primarily in urban environments and the production of urban cultures. Accordingly, urban contexts become the centre stage where the pressures of globalisation are confronted and where questions of global sustainability arise (Sassen, 2012, p. 36-37).

There is an interplay of global and local force at work, where the effects of globalisation resonate in the smallest of settlements, and the effects of urban dynamics cause global problems. Urban centres are the places where environmental challenges, as well as the sustenance of increasing populations are confronted. In effect, environments, and societies are constantly changing, undergoing various, unpredictable pressures. The multi-scalar dimension of these strains entails that they also be addressed at multiple levels. Therefore, global sustainability is an issue that needs tackling at varying scales, from global governance, and essentially, to the local urban scale (Sassen, 2012). Through the careful assessment of contexts, emerges the specific knowledge of place that is essential for local action, and place-based solutions (Sassen, 2012).

The need for local assessment of living environments stems from the understanding of cities as interdependent socio-ecological systems. Specific social cultures and relations are produced from this intertwined interaction of humans and their surroundings (White et al., 2016, p. 2). In essence, cities are the dynamic composite of the interaction of people with and within a specific context, where various forces and agencies come into play. Due to these context specific variations, and different material cultures, it is argued that there is no instinctive lifestyle (White et al., 2016, p. 33). Rather, that it is important to rethink matters of environmental challenges, human development, and wellbeing at a local level (White et al., 2016, p. 33).

The intertwined relationship of humans and their environments incites that the way cities are shaped is directly linked to the way people live, in a reciprocal relationship. In effect, the built form is, ideally, a manifestation of people's culture, values, and ways of life (Sennett, 2018). Consequently, it also affects lifestyles, and supports certain livelihoods. In an ever-changing world, the equation is not so simple, as multiple agents act in shaping cities and living environments, each loaded with different causes and consequences (Sennett, 2018). As cities are central to global sustainability issues and human wellbeing, immense responsibility falls on the way they are shaped, who exercises the right to shape them, and how (White et al., 2016).

The matter of how environments are shaped, and who or what shapes them is also one that resonates on multiple scales, from local to global. In part, it is a political issue that brings up societal inequalities, environmental injustices, and proneness to strain (White et al., 2016; Sassen, 2012). The consequences of these issues reverberate on different levels of the interdependent systems. Matters of social injustice, inclusion, and access to resources become central topics in urban environments and how they are shaped, reinstating the essential role that local action plays in global sustainability (Sassen, 2012, p. 37-38).

The ideas presented here briefly frame the thinking behind this thesis. Firstly, the mutually influencing relationship between societies and their living environments. The multi-scalar connectedness of global and local systems, which resonate effects across global ecological challenges to local issues of living environments. Subsequently, the importance of action at the local scale both for global sustainability, and the wellbeing of societies. Finally, recognising the agencies that act in shaping cities, and the values that, in turn, living environments manifest and support.

Low to Middle Income Cities: Irbid, Jordan

An increasing number of people are moving to urban areas. In particular, low to lower-middle income countries face especially heightened pressures in dealing with the challenges of changing demographics. According to the UN World Urbanization Prospects (2019, p. 12), developing countries are to see the biggest changes in demographics, with urban populations growing at considerably quicker rates in comparison to more developed countries. Furthermore, fastest urbanisation rates are expected to be seen in low to lower-middle income countries (United Nations, 2019, p. 22). This poses new challenges for developing urban contexts, in managing not only to provide adequate service for increasing populations, but to also ensure public infrastructure and urban conditions that allow for social cohesion, inclusivity and continued opportunities for development.

A city facing these challenges is Irbid, in Jordan. According to the UN World Urbanization Prospects (2019, p. xvii), Jordan is considered a lower-middle income country. Hence, it is one of the countries that is expected to see high levels of urbanization in the near future. The level of development of agglomerations in the country varies, with the big cities being more developed than other areas in the country. The city of Irbid is the third largest in population after Amman, the capital, with 650 thousand people (Irbid Statistics, n.d). Irbid, like many other cities in development, has seen a rapid urbanisation process that sprawled around its inner core. The city saw a wave of changes in a relatively short period, which affected its urbanisation and consequently its social dynamics. Amongst these changes was the quick surge in populations, particularly in the 1920s and the 1940s, as well as the introduction of foreign technologies such as motor vehicles and modern construction methods (Ghawanmeh et al., 2008). The current city fabric is therefore the ongoing result of the interplay of different factors, among them the socio-economic, political, and technological.

Irbid's rapid urbanisation has caused different social dynamics to arise. As the city quickly grew to accommodate for new populations, and motor vehicles clogged its narrow streets, little time and attention was paid to the existing social culture. The urban expansion to the south was mainly horizontal, with low buildings and wide streets, resulting in an urban fabric that has not been shaped in consideration of societal cohesion and interaction. Consequently, the city is marked by socio-spatial fragmentation where most middle-income communities have moved south, while the inner core remains inhabited and mainly used by low-income residents (Haddad and Fakhoury, 2016). Furthermore, a lack of resources and proper planning has left the inner core to deteriorate, causing the urban fabric and its residents several setbacks.

More changes and challenges are to face the city of Irbid. In addition to the rising environmental challenges it faces, its population will also continue to grow, creating further vulnerabilities and opportunities. An urban environment that does not support its inhabitant opportunities for development, and on the contrary, induces further social divide and vulnerabilities, is not one that is sustainable. Therefore, there is a deep need for urbanisation that stems from an understanding of the local culture, one that enables and equips society with capacities to deal with the forthcoming challenges.

Figure 1: Areal view of the inner core of Irbid, and its expansion to host a refugee camp to the north

Source: https://www.historyofjordan.com

Research Scope & Questions

In order to find ways in which the urban environment can enable society to deal with complexities and challenges, the concept of social resilience is used as the theoretical spine of the thesis. Resilience is the ability of a system to persevere through change, to adapt and transform in the face of disturbances and continue to develop without loosing its basic identity and functions (Stockholm Resilience Centre, 2015; Walker et a., 2004). Accordingly, urban environments, as socio-ecological systems, can develop to show resilience (Davoudi et al., 2013). This entails that cities find new ways to adapt and transform, in order to face constant change, and find ways for ecological sustainability and societal development and wellbeing (Folke et al., 2010, p. 6).

The concept of resilience also applies to social systems (Berkes and Ross, 2013). The interdependence of socio-ecological systems requires the resilience of the parts, for the resilience of the whole (Berkes and Ross, 2013). Humans have the capacity to steer transformations, using creativity and innovation to turn disturbances into new opportunities (Stockholm Resilience Centre, 2015, Davoudi et al., 2013). Therefore, the social system plays a vital role in the resilience of multi-scalar socio-ecological systems.

In this thesis, the focus is on building social resilience at the local scale, because societies are best able to assess their situations locally and social resilience strengthens their ability to act and transform. This thesis explores ways in which social resilience can be facilitated through urban design in order to endorse communities with the capacity to deal with change, to steer their own development trajectory according to their local context. The concepts are first studied theoretically, then locally through the inner core of the city of Irbid. The thesis seeks to answer the following questions:

How can social resilience be supported through urban design?

How can the inner core of the city of Irbid develop in a socially resilient way?

The main objective of the thesis is to find ways in which urban design can be used to enable the community in Irbid to find ways to cope with change, while finding continued opportunities for development and wellbeing. In order to do that, I take a twofold strategy. Firstly, understanding the concept of social resilience, and relating it to the urban context. Consequently, I produce a guiding framework for urban design tools and processes that help build social resilience capacities. The conceptual framework should always be interpreted at the local level, therefore can be used as

a guideline for other contexts, complemented with a deep understanding of place. Secondly, I undertake an in-depth urban analysis of the inner core of Irbid, to understand the site-specific dynamics and challenges. These strategies form the foundation for the final outcome of the thesis, in which I reinterpret the theoretical framework locally and apply it through design to produce a development plan for the inner core of Irbid.

As stated earlier, there are many forces and agencies that take part in shaping cities. Building capacities for urban resilience is a multidisciplinary route. Therefore, the theoretical framework produced in this thesis is not all encompassing and would need to be complemented with various other areas of knowledge, for example, managing urban ecological resilience, as well as a wholesome approach. Building urban resilience also requires rigorous policies in place to support planning and implementing resilient strategies, in addition to administrative initiatives which ensure the continued success of interventions. Accordingly, politics and governance are key in influencing the course that a city development would take. Nonetheless, the research and design I undertake in this thesis provide feasible strategies for urban design that support building social resilience capacities in the context of study.

Research Methods

The methods of research engaged in this thesis are both theoretical and practical. The theory part of the thesis is based on desk research and literature reviews. Firstly, I cover the topic of resilience, consequently delving into social resilience in the urban context.

The second part is an analysis of the inner core of Irbid. The analysis is primarily based on fieldwork, in addition to desk research of the city's history, and other academic work that study its development. There is little documentation of the city in the form CAD plans, or analysis available to the public. Therefore, I had to obtain the CAD plan for the inner core directly from the municipality, as well as some additional analysis material that had been produced. I thus had to go through a process of refining the drawings, to produce the base plans I needed to continue the research and presentation of information.

Understanding the local context is an essential part of this research, in order to interpret the theoretical framework in context-specific design. Therefore, I chose an ethnographic approach which encompasses spending time in the field, interacting and recording various information for a deeper understanding of the context (Raymond, 2016, p. 164).

For the fieldwork, I spent two weeks in Irbid, visiting the inner core on a daily basis. I relied on various methods of data collection: observation, photo documentation, and semi structured interviews. In their book on studying public life, Jan Gehl and Birgitte Svarre (2013, p. 3) identify observation as the main tool for understanding the life that happens between buildings. My observations were centred around how people interact within the built environment. I paid special attention to how the different genders used space, building edge conditions, and the types of activities that were taking place. To document the data, I used photography, mapping, and counting methods. Since I spent most of my days in the study area, I became a user myself, hence, I was also able to gain a lot of insight through my experience of the place. The aim of these observations is to have a better impression of the context, and an understanding of user needs (Gehl and Svarre, 2013 p. 3).

To gain a deeper insight, I also used semi-structured interviews as a method of qualitative understanding of place. I had prepared a set of questions relating to people's perception of the area, their trends of use, as well as their opinions and needs. My aim was to converse with a wide diversity of people of different ages, genders, and users. More detailed information on the interview findings are presented in the analysis chapter. As they were semi-structured in nature, the conversations went in different directions, always providing me with valuable insight to the culture, impressions and needs.

Thesis Structure

This thesis is divided into three main parts: theory, analysis, and design. The theoretical framework first tackles the concept of resilience. In the first section I present a literature review of the concept, its evolution, and application to both urban and social systems. It forms the basis for understanding the meaning of the term and the complexities behind it. Next, I explain how resilience applies to the urban context, presenting a set of strategies for urban resilience based on the paper "From fail-safe to safe-to-fail: Sustainability and resilience in the new urban world" by Ahern (2011). The strategies are for urban planning and design, therefore, clearly translate the theory of resilience into term that can be applied through the design of urban environments. Subsequently, I go on to explain how resilience applies to the social system. I describe what social resilience is, the tensions surrounding the concept, and the attributes that support it. These attributes are mainly based on the paper "Six attributes of social resilience" by Maclean et al. (2014). These attributes emphasise the iterative relationship between societies and their environments, and the role living environments play in building social resilience capacities. Thus, these attributes played an essential role in forming the framework, and translating the theory on social resilience to urban design. Following that, the next section then interprets intangible urban dynamics that affect social resilience: cultural identity, inclusion, and place. Finally, the theory chapter is concluded with a conceptual framework that synthesises the research and provides a foundation for the following analysis and design chapters.

The Analysis chapter is based on the fieldwork, as well as historical and academic paper studies on the city of Irbid. Firstly, it starts with a presentation of the city, context, history, and urban evolution. Secondly, an urban analysis of the city is presented. Consequently, the theoretical framework is layered over the urban analysis to produce a SWOT (Strengths, Weaknesses Opportunities, Threats) analysis of the inner core. This would act the basis for the design chapter to follow. The Design chapter comprises firstly of an overall urban design plan for the inner core of Irbid. I then explain the strategies I took to get there, as well as the different layers of the urban fabric design. Finally, in the Discussion and Conclusion chapter I reflect on the process, discussing potentials and limitations, and in the end other topics of discussion for the way forward for Irbid.

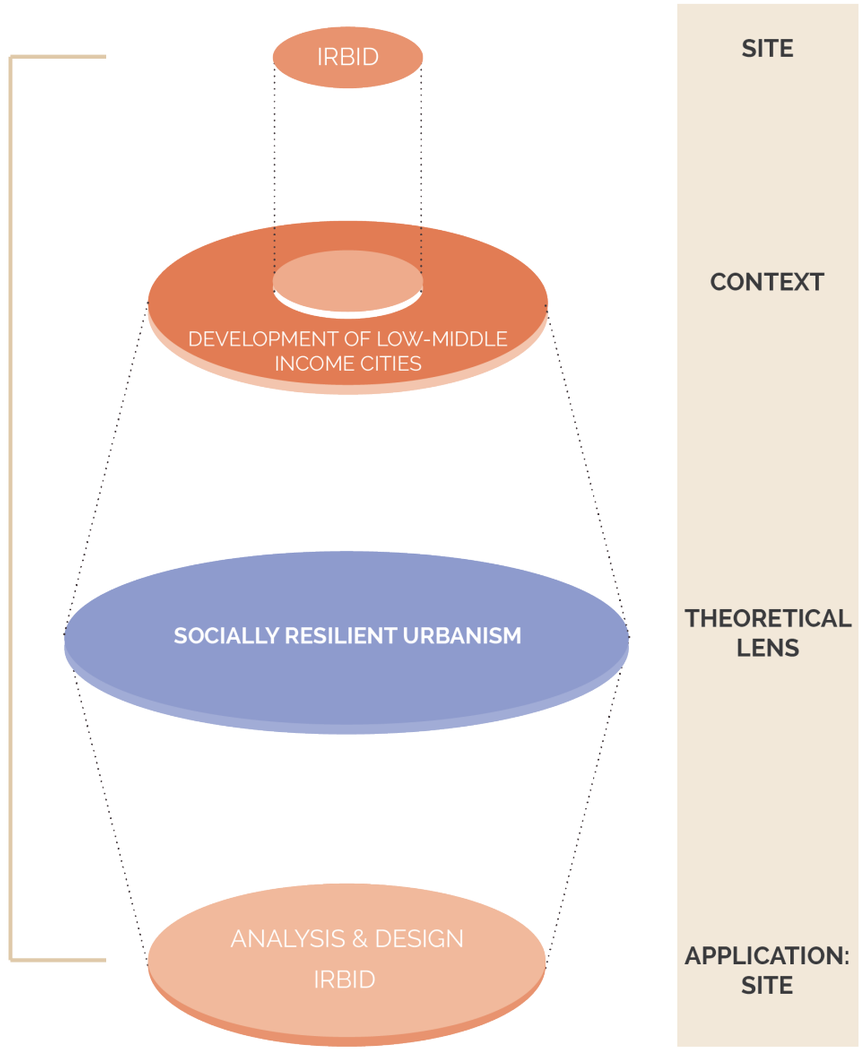


Figure 2: Framework Diagram

Role of the Architect

In my role as an architect, aiming to study and make a design proposal for a city, I had to question, and struggle with finding the values with which I am approaching design. The experience of the built environment has a huge effect on the lives of people, on their wellbeing, on development, on livelihood, on communities and cultures. Therefore, great responsibility lies on municipalities, urban planners, designers and architects. This responsibility is coupled with power, and is weighed with values.

I found myself struggling in finding the balance between what I design, and how it would be appropriated, fearing that whichever approach I take, it would be top-down. It contradicted with what I value in cities, as places where people practice the right of shaping their own environments. Also as places where people can decide their own development trajectories, and their own paths for wellbeing.

One architect whose work greatly resonated with me is Nabeel Hamdi. In his book *The Placemakers' Guide to Building Community* (2010), he proposes a set of four actions for responsible practice, which he calls PEAS - Providing, Enabling, capacity to be Adaptive, and capacity to Sustain. Providing and Enabling are essential to one another. As architects and planners we provide our services and skills, but providing without enabling can fall victim to two types of practice, either a top-down approach where people are forgotten, or a form of charity which provides only momentary help (Hamdi, 2010, p. 141, 146). Therefore, Hamdi insists that providing must be coupled with enabling. He explains that the value of providing is when it meets the current needs, and essentially when "it enables others to provide for themselves, to build assets now or soon and later" (Hamdi, 2010, p. 148). Subsequently, Adaptability is linked to change, as the capacity for change and resilience. Hamdi explains that for planners, the focus should not be on a fixed, exact plan or solution, but rather to regard a plan as "an expression of shared aspirations and an expression of creative opportunities" (Hamdi, 2010, p. 148). One which offers a framework that allows evolution over time, and with people. Finally, the previous approaches are embodied in the capacity to sustain, as sustainability is derived from these responsible practices, and promotes lasting effects (Hamdi, 2010, p. 152).

These are the values with which I wish to approach this thesis. Through my design I do not wish to dictate how people should live, but rather aim to provide the resources that support people's capacity to lead their own lives. The framework of social resilience in this thesis, aims to guide a design project which is enabling, builds capacities, and evolves according to local conditions.

Part I:

Theoretical Framework

The theoretical framework of this thesis is focused on the concept of Social Resilience. The research question aims to find how social resilience can be enabled through urban design. This chapter goes through the concepts in order of scale, from opening up the general concept of resilience, through to applying it to the social systems in the urban context. The first section introduces Resilience thinking, the development of the term and how it applies to socio-ecological systems. Secondly, how the term resilience applies to the urban context is explained. Subsequently, how the term applies to social systems, as Social Resilience. Moreover, urban social dynamic that affect resilience are explored. Finally, the concepts are consolidated with urban design, and synthesised into a conceptual framework for enabling social resilience through urban design.

Urban & Social Resilience

Resilience

In the first section of this chapter I explain the concept of Resilience. It is based on a literature review on the subject leading to an overview of the development of the concept, the thinking behind it, and how it applies to socio-ecological systems.

Resilience of Socio-Ecological Systems

In face of the changes that are constantly reshaping humans and their environments, the concept of resilience has been developing as an approach to persevere in changing circumstances. Resilience thinking has been employed across different disciplines, with its roots in ecological studies as the resilience of ecosystems, later as integrated social-ecological systems (Holling, 1973), and has since expanded into psychological studies, as well as urban planning (Davoudi et al., 2013, Berkes and Ross, 2013). Resilience is seen as a conceptual framework to dealing with different local and global forces including climate change and socio-economic changes (Davoudi et al., 2013), to ensure the persistence, adaptability, or transformability of interdependent socio-ecological systems (Folke et al., 2010; Davoudi et al., 2013). The framework of resilience has evolved in the way it is understood within different disciplines and through interdisciplinary research.

The definition of the term resilience has evolved to better suit the reality of the systems to which it applies. In the context of ecology, Holling (1973, p.17) defined resilience as the ability of ecological systems to absorb changes and persist. Holling (1973) introduced Ecological resilience as a distinction from what was previously known as Engineering resilience. Engineering resilience emphasises the concept of time and a stable state; the time it takes for a system to spring back to a stable state after experiencing a shock. In contrast, Ecological resilience recognises a notion of fluctuation and measures resilience through the amount of shock a system can take, to a point at which it can adapt and persevere (Davoudi et al., 2012; Davoudi et al., 2013). There is a reference to a state of equilibrium in both meanings; Engineering resilience regards a single state equilibrium to which the system jumps back. Conversely, Ecological resilience recognises the possibility of multiple equilibrium states that systems can adapt and change into in order to persist (Davoudi, 2012(a), Davoudi et al., 2013). As the understanding of the nature of systems expands, the concept of their resilience also evolves.

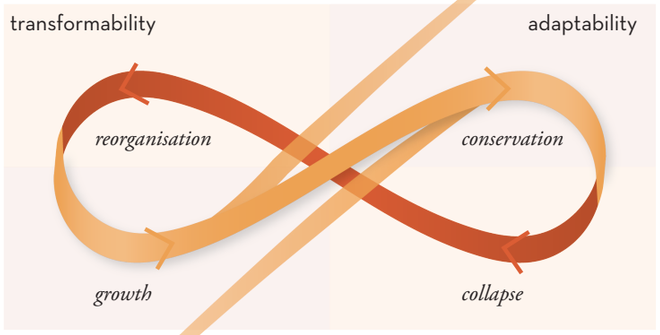


Figure 3: Interpretation of the Adaptive Cycle, incorporating Transformability.

The alternation between equilibrium and change has formed the foundations for defining resilience. Building on Ecological resilience, the concept has developed from the understanding that systems should return to an original state, or to an equilibrium state, to one which accepts a constantly changing environment as the reality (Davoudi, 2012(a); Davoudi et al., 2013). The term is coined by Davoudi (2012(a)) as Evolutionary resilience, which replaces the concept of equilibrium, or stability, with the idea that constant change is intrinsic to systems, and therefore resilient systems should instead respond to that uncertainty. Accordingly, this understanding shifts the viewpoint of reaching an equilibrium state to one in which socio-ecological systems are regarded as complex, interdependent, self-organising and undergoing constant change (Davoudi (2012(a), p. 302).

The Adaptive Cycle

This dynamic in socio-ecological systems is portrayed in the idea of the adaptive cycle. The concept was developed by Holling (1986), and is the view that systems are nested within one another in 'panarchies' (Davoudi et al., 2013, p. 310). As socio-ecological systems exist and interact at multiple scales of space, time and social organisation, a 'panarchy' portrays the interaction between systems at different scales, as nested hierarchal systems (Resilience Alliance - Panarchy, 2020). The adaptive cycle depicts socio ecological systems as functioning across different times and scales, and undergoing four phases of change (Davoudi, 2012(a), 2013; Resilience Alliance - Adaptive Cycle, 2020). The four phases in the adaptive cycle are: Growth or Exploitation, Conservation, Collapse or Release, and Reorganisation (Gunderson & Holling, 2002, cited in Walker et al., 2004; Davoudi, 2012(a), 2013; Resilience Alliance - Adaptive Cycle, 2020). They are visualised in an infinity curve representing systems at different scales. The first loop of the curve, referred to as the fore loop, represents growth and is a time of slow development for the system, which is high in growth, accumulation of resources, and diversity, and is of high but decreasing resilience. The second loop, the back loop, represents initially a time of decline for the system, where a collapse is bound to happen, but thereafter is a time of rapid reorganisation. It is therefore the time of greatest uncertainty, and high resilience where potential for creative opportunities for reorganisation lies (Gunderson & Holling, 2002, cited in Davoudi, 2012(a), 2013; Resilience Alliance - Adaptive Cycle, 2020).

The adaptive cycle represents systems amongst others in a panarchic model. This means that the four stages of the cycle do not have to be in sequential order, as a system can alternate between them and skip certain stages (Davoudi, 2012(a), 2013). Moreover, these systems do not operate individually, but in a nested model within other systems, self-organising in order to maintain resilience (Davoudi et al., 2013; Walker et al., 2004). The adaptive cycle, hence, offers an understanding of resilience which is in coherence with the Evolutionary definition, as a dynamic process,

undergoing continuous change (Davoudi et al., 2013, p. 310), and understood to happen across multiple scales and time in systems nested in panarchies (Holling & Gunderson, 2002, cited in Davoudi, 2012(a), p. 304; Folke et al., 2010).

Persistence, Adaptability, and Transformability

The acceptance of constant change as a reality for socio-ecological systems ultimately incorporates persistence, adaptability, and transformability as the main aspects of resilience (Folke et al., 2010; Davoudi (2012(a)). Firstly, persistence is the ability of the system to endure a certain amount of stress. It is therefore essential, especially when socio-ecological systems receive shocks at the grander scale, in order to persevere (Davoudi et al., 2013, pp. 315-316). Subsequently, Walker et al., (2004) define adaptability as the "capacity of actors in a system to influence resilience". In socio-ecological systems, humans are the main actors; they act with intent and through their collective capacity they manage the resilience of the system (Walker et al., 2004). Finally, Walker et al., (2004) define transformability as "the capacity to create a fundamentally new system when ecological, economic, or social conditions make the existing system untenable". Transformation can be intentionally brought about by people, usually at multiple scales, or can be forced as a cause of changing environmental, or socio-economic circumstances at a grander scale (Folke et al., 2010, p. 5).

Following the recognition that humans can alter the resilience of the system through deliberate intervention, Davoudi et al. (2013, p. 13), integrate transformability into the adaptive cycle, under the Evolutionary resilience framework. Human agency and intention can play a role in the phase of collapse and reorganisation to offer an opportunity for transformation into a 'desirable trajectory' (Davoudi et al., 2013, p. 318). Through the social system embedded in socio-ecological systems, human intention can direct the transformation to a to a trajectory that better supports human wellbeing (Keck and Sakdapolrak, 2013), and insures the resilience of the system as a whole (Berkes and Ross, 2013).

Incorporating transformability as part of the adaptive cycle, where human intention can steer the transformation has brought forth the ideas of social learning and 'preparedness' in the concept of resilience in socio-ecological systems (Davoudi, 2012(a)). Human ability to foresee and plan, coupled with their creativity and innovation, enables them to deliberately intervene in system cycles. Consequently, Davoudi (2012(a); Davoudi et al., 2013, p. 314) states that this requires 'preparedness'; defined as the social learning capacity, inherent only in social systems and linked to human ability to predict. Preparedness is an attribute that aids in dealing with the unpredictable nature of stressors, which can be either external or internal disturbances in the system. The unpredictability of disturbances is at the heart of resilience thinking, so the ability to identify opportunities and vulnerabilities is essential for the success of preparedness. Through social learning, and circulation of acquired knowledge, vulnerabilities can be seen as 'windows for opportunity' (Folke

et al., 2010; Davoudi et al., 2013, p. 315) where transformations to a desirable state can happen. In effect, preparedness is the ability to use social learning and knowledge in order to foresee vulnerabilities, and plan alternative routes, turning them into opportunities for transformation (Davoudi, 2012(a); Davoudi et al., 2013).

In conclusion, Resilience is a systems concept that has developed in order to persevere and develop within a constantly changing environment. It is defined as "the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks" (Walker et al., 2004). Resilience thinking is based on the belief that humans and nature are part of complex, integrated systems referred to as socio-ecological systems (Stockholm Resilience Center - What is resilience?, 2020). Consequently, the adaptive cycle is a graphic tool that portrays the cross-scale interaction of socio-ecological systems within multiple scales and time. Moreover, it emphasises the phases of collapse and reorganisation of a system (Resilience Alliance - Adaptive Cycle, 2020). Through human agency, collapse can be seen as an opportunity for change, where the transformation of the system can better support ecosystem sustainability, and human development. Finally, this requires the preparedness of the social actors in the system, through effective social learning and innovation.

Urban Resilience

Resilience is a concept that applies to urban environments. This section provides an overview of how urban fabrics can be conceived as resilient socio-ecological systems. Consequently, a set of strategies for urban resilience is introduced. They are provided by Ahern (2011) in a paper that reconciles sustainability and resilience in urban environments with design and planning decisions. The strategies integrate different fields of knowledge, which address environmental urban resilience and sustainability specifically though urban planning and design.

Cities as Socio-ecological Systems

The concept of resilience applies to the urban context. Cities are regarded as complex socio-ecological systems that function across multiple scales and timeframes through continuous interactions (Davoudi et al., 2013, p. 312). Davoudi (2012(a) explains that Evolutionary resilience helps us conceive of places not as neutral but "as complex, interconnected socio-spatial systems with extensive and unpredictable feedback processes which operate at multiple scales and timeframes" (Davoudi (2012(a), p. 8). Therefore, urban resilience can be defined as the ability of complex urban systems, with all their internal structures and networks, across temporal and spatial scales to persist, adapt, and transform; self-organising in the face of uncertainty and

unpredictable disturbances (Davoudi et al., 2013; Meerow et al., 2016). Within this framework, challenges facing cities can be reinterpreted in order to find new ways for adaptation and transformation that would "sustain and enhance ecosystem services, societal development and human well-being" (Folke et al., 2010, p. 6). It follows, then, that the urban context is the stage where social and ecological systems are embedded, interdependently producing environments that continuously evolve.

Conceiving cities as socio-ecological systems incites clarifying the terms, positioning the human in these systems, as well as cities within the ecology. Socio-ecological systems are defined as 'complex, integrated systems in which humans are part of nature' (Resilience Alliance - Adaptive Cycle, 2020 from Berkes & Folke 1998). Envisioning the city as an ecosystem required a fundamental rethinking of the term 'ecology' (Pickett, 1990, cited in Evans, 2011). In turn, this has influenced how city dynamics are understood; recognising the acting agents within them and the processes that shape them. Redefining humans' relation to the ecology and within nature, was an essential step in recognising cities as socio-ecological systems. It required a shift in the thinking of humans' deliberate actions as external factors that cause disturbances to the system, to being embedded agents in ecological systems (Evans, 2011). Thereby, social conditions are rooted in environmental contexts, the natural and the built, creating both possibilities and constraints for societal development (White et al, 2016, p. 25).

Cities as urban ecosystems are human dominated systems (Ernstson et al., 2010), that also include many acting agents within them; ecological, human, and technological. They can be conceived of as the constantly changing product of societies' mutual interaction with their surrounding environments. Thus, they incorporate interdependencies not only between the social and ecological, but also materially through technical networks and human innovations. (White et al., 2016, p. 33; Ernstson et al., 2010). The concept of Evolutionary Resilience recognises the notion of interdependence in socio-ecological systems, where they are thought to be linked in 'synergistic and coevolutionary relationships' (Nogaard, 1994, cited in Adger et al., 2000, p. 4). Following that, the resilience of the social system is related to that of the ecological system (Adger et al., 2000), in a relationship of changing dynamics.

Strategies for Urban Resilience

For cities to be resilient, the resilience of the complex urban systems within them needs to be managed. Desouza and Flanery (2013) conceptualise the city into its highest category of basic elements: the physical and the social; "Our existence and activities within a city occur at the coming together of the physical and social spheres" (Desouza and Flanery, 2013, p. 92). Building resilience capacity in cities requires proper management of the physical sphere and engagement with the social systems that would enable them to synergise together into a resilient whole. Certain planning strategies can create more resilient cities. Ahern (2011) develops five strategies

for urban planning and design which help build resilience capacity in cities. They are: Multifunctionality, Redundancy and modularisation, Bio and Social Diversity, Multi-scale Networks and Connectivity, and Adaptive Planning and Design.

Firstly, Multifunctionality responds to the problem of increasingly limited space in cities. Hence, it provides a compact and efficient model for different ecosystem services in the city. It works through weaving different functions together in the city fabric, or alternatively, through vertical stacking of diverse functions and services (Ahern, 2010, p. 145).

Secondly, Redundancy and Modularization, they are key elements of resilience, providing back up functions and flexibility. They work by spreading risk over time and space and multiple systems through the decentralisation and distribution of the same functions (Ahern, 2011, p. 342).

As for (Bio and Social) Diversity, including bio, social, physical and economic diversity are all considered essential for urban resilience. The idea behind it is that a larger variety of responses are produced by having a number of different entities performing the same functions, hence increasing the adaptability of the system (Ahern, 2011, p. 342).

The fourth strategy, Multi-scale networks and Connectivity comes from the understanding of the urban fabric as a network of connected functions (Ahern, 2011, p. 342). An urban system will not function if its elements are not well connected.

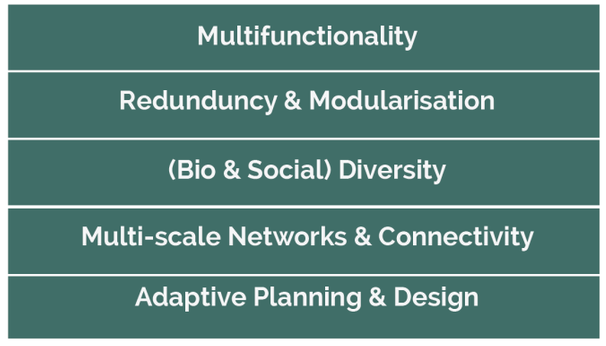


Figure 4: Attributes from Ahern (2011), From fail-safe to safe-to-fail: Sustainability and resilience in the new urban world

Accordingly, the weakening of connectivity would obstruct the flow of elements within the urban landscape, including people, energy, food, and other living things, therefore weakening the functioning of the system itself (Ahern, 2010, p. 153).

Finally, Adaptive Planning and Design is built upon the notion of uncertainty. Urban planning and design decisions have to be made with incomplete knowledge. Therefore, the adaptive method allows space for uncertainty and an acceptance of failure as part of the process of building knowledge itself (Ahern, 2010, p. 155). It is based on the idea of experimentation, where new ideas are tested in 'safe-to-fail' methods (Ahern, 2011, p. 343).

All in all, the urban context is an essential centre stage where issues of the sustainability of socio-ecological systems can be confronted. This section emphasises how interwoven these systems are, and offers a set of strategies as a guiding framework for the resilience and sustainability of urban environments. Accordingly, these strategies aim to build resilience capacity in cities; incorporating a multidisciplinary method which is required by the complex multi-layered structures of urban fabrics. Above all, they are strategies that embrace uncertainty, adopting a new way of thinking which turns problems into opportunities, and ones which inherently require interpretation at the local scale.

Social Resilience

The concept of social resilience is used as a theoretical spine for this thesis. This section explains how the term resilience applies to the social part of socio-ecological systems, its importance for the resilience of the whole, and the tensions that surround it. As it is embedded in its environment, this section explains how social resilience

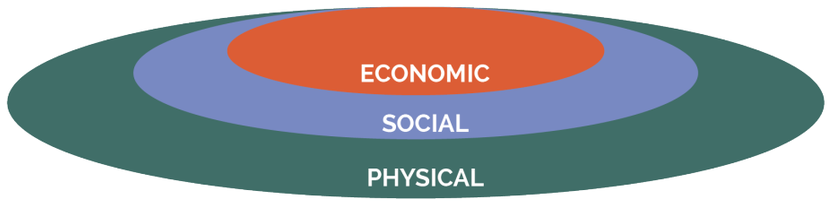


Figure 5: The physical including the natural and built environment. Societies are embedded in their environments, social cultures, norms and values are a result of the metabolism of the social and the physical.

is built through capacity giving assets. Finally, a list of attributes from a paper by Maclean et al. (2014) are explained. The authors define these attributes through case study research, and thus aim to concretise the research on social resilience.

Resilience of what, to what, and for whom

Resilience is recognised as a systems concept that can be applied to all scales from the individual to the planet (Berkes and Ross, 2013, p. 12). The fact that socio-ecological systems are interdependent means that the resilience of the interrelated parts contributes to the resilience of the whole (Berkes and Ross, 2013, p. 12). In their paper on community resilience, Berkes and Ross (2013) argue that the resilience at the level of communities, in a panarchic system, could also affect resilience across other levels; 'Indigenous peoples worldwide have long understood this interdependency, wherein a healthy ecosystem supports human well-being, and a thriving society is best able to care for its environment.' (Berkes and Ross, 2013, p. 11). Therefore, it is necessary to recognise the importance of social resilience for the resilience of the whole system. Through this interconnectedness, however, it is also essential to reaffirm that social resilience is intricate in its surroundings and cannot be regarded as a removal of the social sphere from the environment, but rather as a process of mutual interaction with the surroundings where the necessary components of strengthening social resilience are nurtured.

The literature on resilience repeatedly poses the questions of resilience 'of what, to what, and for whom' (Meerow and Newell, 2019). In questioning resilience for whom in interdependent socio-ecological systems, Brown (2014, p. 109) offers the viewpoint that the social dimension is inherent in it. Accordingly, Brown (2014, p. 109) sheds light on other tensions that surround the concept when applying it to social systems. Mainly, the inherent inequality in the social sphere when determining who benefits from resilience, as not all resources are distributed equally and power politics play a big role in decision making (Brown, 2014, p. 109). Meerow et al. (2019) concur that in asking more specific questions around resilience for whom, from what and to what, the issue of politics in decision making, and consequent potential for trade-offs between stakeholders are bound to surface (Meerow and Newell, 2019, p. 316-318). Consequently, the questions around resilience in socio-ecological systems are intricate in politics, and highly dependent on the context and scale in which they are studied (Meerow and Newell, 2019, p. 316-317).

Resilience 'to what' has mainly focused on external stressors rather than internal disturbances within the system (Brown, 2014, p. 109). In their article, Keck and Sakdapolrak (2013, p. 8) define stressors as both external and internal, which they categorise generally as either natural hazards, natural resource management, or social change and development issues. Through their focus on managing resilience in cities, Desouza and Flanery (2013) categorise stressors as natural, technological, economic, and human (Desouza and Flanery, 2013, pp. 92-93). Stressors or disturbances can

either stem from within the interdependent systems, creating imbalance at a local level that could send shockwaves to grander scales, or they can be external shocks to the whole through natural disasters or certain globalisation forces. Davoudi (2012; 2013) challenges the idea that stressors can only be external, and sheds light on the seriousness of the effects that internal disturbances can cause within a system. This puts emphasis on the disturbances that socio-economic systems can cause, such as societal change and economic fluctuations. The unpredictable nature of these disturbances therefore places the notion of uncertainty at the heart of resilience thinking (Davoudi (2012; 2013). Above all, it places emphasis on the necessity of building resilience and adaptive capacities in social systems in order to deal with and navigate through change.

Community Resilience

In Berkes and Ross's article (2013), the attributes of community resilience are synthesised from the literature on psychology resilience and ecological resilience. The importance of community resilience is highlighted by the fact that most incidences of unexpected change are a result of social or economic factors (Berkes and Ross, 2013, p. 4) In defining the concept of community resilience, Berkes and Ross (2013) emphasise the importance of community action in the face of challenges, thereby identifying self-organisation and agency as the most important attributes to be strengthened for the development of community resilience.

Berkes and Ross (2013) go on to identify, through the literature, the different community strengths that they deem important for resilience building. An important strength that communities can build on is social learning. A community's adaptive capacity relies heavily on the ability for social learning; the circulation and building up of knowledge (Berkes and Ross, 2013, p. 6). Resilience building is the ability to use that knowledge in order to thrive in changing environments. Other key community attributes to be strengthened are connections and social networks, as well as inclusion and belonging as they are all attributes that build social capital. For resilience building, communities would work with their strengths, which would support agency and self-organisation.

Capacity Giving Assets

In their overview on social resilience, Keck and Sakdapolrak (2013) define social resilience within a framework of capacities: coping capacities, adaptive capacities, and transformative capacities. The authors explain resilience as a concept that has evolved from the persistence of ecological systems, to incorporate adaptive socio-ecological systems, within which is the adaptability of humans in nature, and towards the transformability of society to deal with global change (Keck and Sakdapolrak,

2013, p. 8). Starting with coping capacities, a society is able to use the resources it has at the moment of threat to restore the current state of things. Following that, with adaptive capacities incremental change is achieved as a society learns from previous experience and adjust livelihoods for preventative measures. Finally, with transformative capacities a society has the ability to partake in decision making processes that would work to improve individual wellbeing as well as the society's readiness to face future disturbances (Keck and Sakdapolrak, 2013, p. 10-11). In their identification of the three capacities for social resilience, the authors recognise the outcome of building these capacities as ultimately affecting the state of wellbeing of society. Above all, this is emphasised through transformative capacities where the aim is not only to maintain the current state of wellbeing, but also to enhance it in the face of current and future disturbances, targeting societal change and development (Keck and Sakdapolrak, 2013, p. 11).

There are several capacity giving assets that are key in building social resilience. According to Keck and Sakdapolrak (2013, p. 11) they include economic, physical, natural, and human assets, where the all-encompassing ones would be social relations

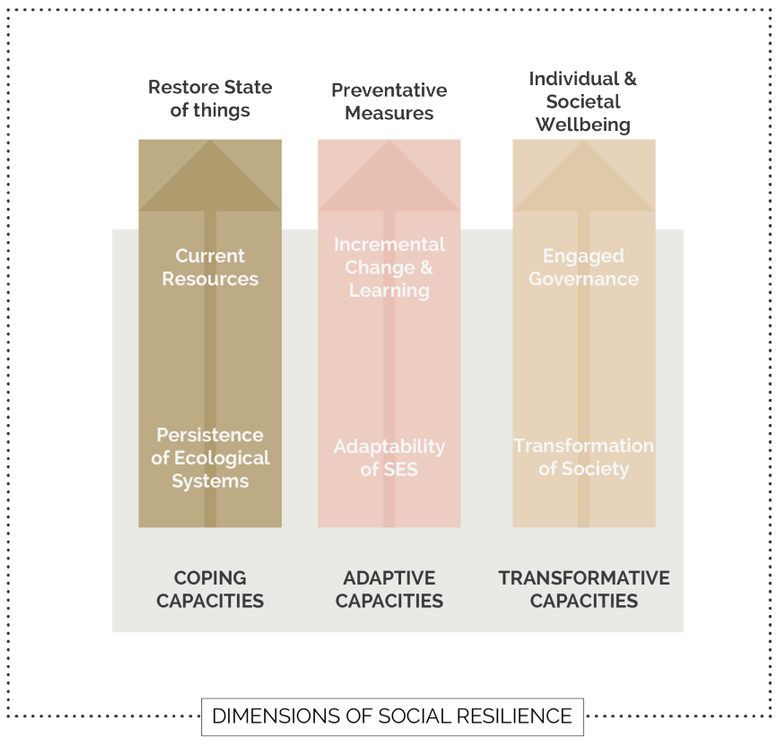


Figure 6: Dimensions of Social Resilience as described by (Keck and Sakdapolrak, 2013, p. 11). The capacities are traversed according to the degree of stress and agency of the actors.

and social capital. Social capital refers to the social networks, interaction, and activities within community members (Forrest and Kearns, 2001, p. 2129). Hence, it is based on trust, cooperation, and social organisation within society, which is also informed by the physical environment (Perkins and Long, 2002, p. 294; Forrest and Kearns, 2001). Moreover, Social capital is strongly linked to society's ability for self-organisation, where strong social networks allow for social learning and participation (Forrest and Kearns, 2001).

According to Obrist et al. (2010, p. 288-290), the human capacity to act, which is an essential point for resilience, is dependent on access to capital. They draw on the research of Bourdieu (1984; 1986), to define essential capitals as economic capital, social capital, and cultural capital (Obrist et al., 2010, p. 288). Economic capital refers to management of economic resources, social capital as explained previously refers to social networks and relations, and finally cultural capital refers to knowledge, skills, and education (Obrist et al., 2010, p. 288). In addition to that, Bourdieu adds 'Symbolic' capital to account for power dynamics in society which also affects access to other forms of capital (Obrist et al., 2010, p. 288). All in all, access to capitals affects the social resilience of a community, and they are strongly linked to the context of the socio-ecological system.

Attributes of Social Resilience

As it is embedded in its surrounding environment and highly dependent on the quality of connection and social relations, there are certain attributes that help build social resilience. There is a strong correlation found between building adaptive capacities and social resilience (Maclean et al., 2014). Following that, Maclean et al. (2014) delve deeper in their article to derive six attributes for building social resilience. They define them as: knowledge, skills, and learning; community networks; people–place connections; community infrastructure; diverse and innovative economy; and engaged governance. These attributes are highly connected to the environment, and the authors advocate the necessity of recognising the intricate connection between societies and their environments for the successful management of social resilience (Maclean et al., 2014, p. 153). Thus, the attributes defined are not only social attributes, but rather correspond to the acknowledged three pillars of sustainability: environment, society, and economy (Maclean et al., 2014, p. 153). They engage in the surrounding physical and social environments that provide the circumstances in which social resilience can develop.

Knowledge, Skills, and Learning
The first attribute, 'knowledge, skills and learning', relates to applying knowledge obtained locally or globally to solve local issues (Maclean et al., 2014, p. 149). This attribute supports the capacity of the community to cope and adapt in changing circumstances. Accordingly, it incorporates the cooperation between experts, stakeholders, and decision makers, as well as the transfer and adaptation of locally and

globally developed technology and innovation to suit local conditions (Maclean et al., 2014, p. 149). Equally important for the ability to respond to change is the development of solid and diverse skills amongst members of the community (Maclean et al., 2014, p. 149).

Community Networks
This attribute is linked to the essence of human needs for connection and community. It refers to the social interactions, and activities that act as the support system for people, especially in changing circumstances (Maclean et al., 2014, pp. 149-150). 'Community networks' shares commonalities with the concept of social capital (Maclean et al., 2014, pp. 149-150), and in essence it enables community members to come together in the face of challenges. It is therefore strengthened through various activities that support people and allow them to interact.

People-Place Connections
The 'people-place connections' stems from recognising the interdependency between societies and their environment (Maclean et al., 2014, p. 150). The two main aspects it incorporates are people's connection to place, and subsequently, the sustainable livelihood that place supports (Maclean et al., 2014, p. 150). The concept relates strongly to the idea that the wellbeing of societies depends on that of their environment, and that a healthy society is better able to care for its environment. People's connection to place acts as a strong motive to better adapt and cope with change (Maclean et al., 2014, p. 150).

Figure 7: Social Resilience Attributes according to (Maclean et al., 2014).

Community Infrastructure
This attribute refers to the services and facilities that support the community needs (Maclean et al., 2014, p. 151). They comprise of the diverse facilities that sustain society, including healthcare amenities, transport services, cultural activities, as well as community recreation facilities (Maclean et al., 2014, p. 151). This infrastructure is necessary for the upkeep of the community, to respond to their needs and allow for societal development.

Diverse and Innovative Economy
As for 'diverse and innovative economy', its purpose is to sustain the community by asserting the importance of a regional economy which provides diverse opportunities for employment (Maclean et al., 2014, pp. 151-152). Consequently, it embraces change and regards it as a prospect for innovative economic development. It is, hence, an essential aspect for social resilience, where a diverse economy allows the community to cope with change, turning vulnerabilities into opportunities (Maclean et al., 2014, pp. 151-152).

Engaged Governance
Lastly, 'engaged governance' refers to collaborative decision making, involving the stakeholders concerned with the issues (Maclean et al., 2014, p. 152). It entails the cooperation of private, public, and community stakeholders for successful solutions (Maclean et al., 2014, p. 152). Therefore, community networks, and cross-scale communication is necessary for the engaged approach, to enable the effective sharing of knowledge for solving issues (Maclean et al., 2014, p. 152). An essential element in successful engaged governance is the fostering of ownership amongst community members. This can be achieved through incorporating them not only in the processes of decision making, but also in the active participation of care and maintenance of the physical environment (Maclean et al., 2014, p. 152).

To conclude, social resilience can be understood as the ability of the social system to adapt, transform, and respond to challenges, as well as the capacity of individuals and communities to enhance their own wellbeing. This requires that a community be able to enact its agency and self-organise. The resilience of the social system is essential for resilience at mutiple scales in interconnected socio-ecological systems. However, it remains a contested concept as it is intricate in political issues of social inequalities and access to resources. Following that, it is essential to conceive of environments and people as mutually influencing. Therefore, in order to build social resilience, access to certain capacity giving assets is necessary. The attributes of social resilience listed can be thought of as a further elaboration of those capacity giving assets. Accordingly, they can be managed through the environment to strengthen the social resilience of communities, consequently enhancing their abilities to cope, adapt or transform (Maclean et al., 2014, p. 15).

People, Environments and Social Resilience

The intertwined relationship between people and their local environmental conditions forms different kinds of place, societal interactions, and dynamics that eventually affect the resilience capacity and agency of people. The design and form of places affects how people act in them. Firstly, this section relates the notion of identity and culture to resilience. It then briefly describes the different layers of 'place' that people conceive, and how sense of place and attachment affects people's willingness to act. Finally, the notions of inclusion, diversity, and inequality are discussed. As they are all affected by place, and in consequence also affect the resilience of communities. The aim of this section is to link the concept of resilience to the social fabric and qualitative conceptions of the city.

Resilience and Identity

The resilience of a city, is its ability to persevere in the face of change, maintaining its basic structure, functions, and feedback hence, its identity (Walker et al., 2004; Walker et al., 2010, p. 187). In their paper on cultural resilience and identity, Rotarangi et al. (2014) explore the relationship between cultural identity and the socio-ecological systems within which identity is embedded. Their research is seen as an extension to the literature on resilience which has not put enough emphasis on community and culture (Rotarangi and Stephenson, 2014). They concede that regardless of a change in the main structures, functions and feedbacks of a system, cultural identity can be maintained through the identification and maintenance of the 'stable elements of the system that are core to its identity' (Rotarangi and Stephenson, 2014), calling them 'resilience pivots' (Rotarangi and Stephenson, 2014). Thereafter, cultural resilience is the "maintenance of cultural identity, values, and practices" (Rotarangi and Stephenson, 2014), throughout adaptation and transformation in the face of change. Hence, the concept of cultural resilience turns the lens to the elements that remain stable in a system undergoing change (Rotarangi and Stephenson, 2014). If a characteristic of a resilient system is one that has a stable identity, then identifying these stable resilience pivots is an indication of the resilience of the system, and more specifically of cultural resilience (Rotarangi and Stephenson, 2014).

Cultural identity is embedded in the socio-ecological environments within which it is formed. The interplay between the societies and their environments form social and cultural identities. Humans have always been embedded within their environments, in a constant, mutual metabolism of shaping, and being shaped by their surroundings. It can be argued that social relations, institutions, and ideologies come

out of interactions with nature (Marx, 1973, cited in White et al, 2016, p. 25). Thus, there is an intertwined interaction between people and their environments, creating the specificities of place, cultural identity, and attachments. The conceptualisation of cultural identity as a resilience pivot, portrays the importance of addressing cultural identity in urban design and planning, and in all efforts of resilience building for socio-ecological systems.

The Role of Place

Studies of 'place' and resilience have linked notions of sense of place and place attachment as contributing to social resilience (Lyon, 2014). In his seminal work on Place Attachment, Yi-Fu Tuan (1974, 1977) argues that undefined 'space' becomes endowed with value over time as it is lived through social experiences and therefore evolves into a 'place' (Cited in Manzo and Perkins, 2006, p. 337). People's attachment to place, the emotional relationships they construct with the built or natural environment, can have an effect on their response to change (Lyon, 2014, p. 1010). Consequently, the characteristics of physical place can also influence people's attitudes and action (Lyon, 2014).

In his paper on the relationship between place and resilience, Lyon (2014) untangles the layers of place, in order to better understand how they affect societal action. He differentiates three layers of 'place' as: Incarnate, Discarnate and Chimerical Place. Firstly, he defines Incarnate Place as the identifiable physical features of place. It encompasses the socioeconomic infrastructure of place such as businesses, services, and transport, as well as the general physical components of place including specific landscape, climate, or architectural features (Lyon, 2014, p. 1011).

As for Discarnate place, it refers to place character which appears in through the community's expression of sentiments about place (Lyon, 2014, p. 1012). Moreover, Discarnate place could be embodied through either large-scale public infrastructure developments, or else in details such as shop signs, or graffiti (Lyon, 2014, p. 1012). Most importantly, this symbolic manifestation of place character has an influence on people's thoughts and actions, tradition, culture, or heritage and can enable or hinder social agency (Lyon, 2014, p. 1012). It is a slow process of community specific social and cultural interactions that form Discarnate place over time, hence, it remains intangible, embodied in the Incarnate place, and expressed in Chimerical Place (Lyon, 2014, p. 1012).

Lastly, Chimerical Place refers to Place Attachment and Sense of Place. Above all, Chimerical place appears in people's emotions and opinions of a place, their identification with it. Strong place attachment being an attribute of social resilience, it consequently has an influence on people's actions towards it, and it can manifest simply by the choice of residing there, moving away, as well as with engagement within place (Lyon, 2014, p. 1013). The aim of this layered description of place, is to give

a deeper understanding of how people would respond when faced with change, and the influence that the multi-layered relationship of social systems to their environment has in the resilience of socio-ecological systems (Lyon, 2014).

People's relationship to place, their rootedness in it, and their identification with it is strongly correlated to the involvement of people in the community and their proactiveness in changing and shaping their environments. Place identity is a term touching upon the relationship formed between the person and their physical environment. More specifically, it relates to the effects of the physical environment on the development of certain personal aspects in people such as belief patterns, preferences, feelings, values, and goals. Thus, this influences personal identity and outlooks on life (Manzo and Perkins, 2006, p. 337). Having a significant impact in forming people's identity, place can therefore also impact people's willingness to engage in these places (Manzo and Perkins, 2006, p. 337). Concurrently, this goes in line with Lyon's (2014) emphasis on the importance of Chimerical Place in encouraging or constraining community involvement. In addition, Manzo and Perkins (2006, p. 339) also point out that it has an influence on fostering people's sense of community.

Figure 8: View of a commercial street in the Inner Core of Irbid

A 'Sense of Community' is focussed on people's connections to one another. A Sense of Community is essential in the forming of successful neighbourhoods, which foster feelings of trust and belonging (Manzo and Perkins, 2006). The main aspects of Sense of Community centre around feelings of inclusion and belonging which are usually founded on common, shared aspects such as history, interests, or concerns (Manzo and Perkins, 2006; Perkins and Long, 2002). In their multi-scalar analysis of the relationship between Sense of Community and social capital, Perkins and Long (2002) found that a Sense of Community is a key ingredient and indicator of social capital. At a neighbourhood level, Perkins and Long (2002) also emphasise that a stronger Sense of Community eventually leads to more participation amongst the residents, in pursuit of collective solutions or community projects. Neighbourhoods with families, including children, long term residents, as well as more educated residents displayed both a higher Sense of Community as well as more participation in the community (Perkins and Long, 2002, p. 309). Accordingly, both the physical and social environment of place can affect community connections (Hyde 1998, from Perkins and Long, 2002, p. 300).

There is an evident connection between the concepts of Place Attachment, Sense of Community and Participation. Although Perkins and Long, (2002, p. 297) argue that one is more spatially oriented, whereas the other is more socially oriented, both Place Attachment and Sense of Community are intrinsically intertwined. They complement one another, as they both bring people to participate in neighbourhood improvements, consequently also influencing people's connections to one another and to place (Manzo and Perkins, 2006). Hence, Manzo and Perkins (2006) argue that addressing Place Attachment is crucial in planning and revitalisation efforts in order to build stronger communities and neighbourhoods. If ignored there is a risk of creating greater divides that would also hinder community building and involvement.

Inclusion and the City

The issue of inclusion in the city arises especially with the question of resilience for whom. As inequality and social justice are intricate in the urban fabric of cities, distribution of resources, access, and exposure to risk become fundamental issues of urban resilience (Trogal et al., 2019, p. 3). Moreover, social exclusion and issues of social justice obstruct certain individuals or communities from developing adaptive capacities for resilience (Meerow et al., 2016, p. 9), therefore fundamentally reducing their abilities for resilience. It follows, then that inclusion and equal access to resources should be key priorities to address for achieving urban resilience.

As discussed in the section on Social Resilience, capacity building assets are not equally developed, nor evenly distributed across societies, which in turn affects the opportunities and vulnerabilities that communities encounter in different times and places (Keck and Sakdapolrak, 2013, p. 9). Matters of injustice, equality and power

in society are exposed in the discussion on social resilience, as they ultimately affect the building of capacity giving assets (Keck and Sakdapolrak, 2013, p. 9). Consequently, this hinders the agency of the social actors in the system, as access to resources affects the individual and community's abilities to cope, adapt and transform (Keck and Sakdapolrak, 2013, p. 9). 'At its heart, social resilience has to confront the interplay between social structures and the agency of social actors' (Bohle et al., 2009, cited in Keck and Sakdapolrak, 2013, p.10). Therefore, an analysis of the context in which social resilience is studied is essential (Keck and Sakdapolrak, 2013, p. 9), in order to identify vulnerabilities, and to strengthen them for the resilience of the whole (Maclean et al., 2014). The pathway towards social resilience should strive to nurture environments where there is access to resources in the public sphere that can enhance social capital and agency.

As social capital is an essential component for the resilience of communities, urban issues that weaken it would therefore hinder resilience. Khalil et al. (2013) argue that inequality and social exclusion are factors that would weaken social capital, and therefore a city's resilience. One of the criticisms of applying resilience theory to social systems is that it does not take power and inequality into consideration (Armitage et al., 2012; Brown, 2014; Meerow et al., 2016; Trogal et al., 2019). As exposure to challenges and crisis is not equally distributed in cities, there is a need for urban resilience to address inequalities, exclusion, and poverty in urban areas (Trogal et al., 2019, p. 3). Accordingly, Khalil et al. (2013) explore the connection between injustice and resilience, eventually arguing that a resilient city must be a just city. Resilience of urban areas should therefore strive for the resilience of its different communities, as well as their wellbeing through equal access to resources, and capacity building assets. Inequalities increase community vulnerabilities, making certain groups within a city, and possibly the city as a whole less resilient, as it displays lower assets of social capital, and is less equipped to facing challenges (Khalil et al., 2013).

Inherent to cities is the presence of social diversity. They are places that host a multitude of people with different beliefs, skills, professions, and traditions. Concurrently cities also constitute people of different socio-economic backgrounds, gender, and age. Successful cities embrace this diversity as an asset, when it can be valued as a wealth which can bring in further prosperity. The existence of this diversity in cities, inherently also means that they are places where the confrontation of contradicting ideologies takes place. Therefore, attaining inclusion and social cohesion is an effort that requires supportive policies, and urban planning and design, which strives to create places of social diversity that foster a sense of belonging and community (Hackett, 2018).

In conclusion, this section aims to connect together notions of identity, place and belonging in the city. They are all intangible in nature, and manifest in people's sentiments and actions. The first section identifies cultural identity as a resilience pivot. Therefore, marking the importance of sensitivity to cultural locality and

identity through resilience building. Following this, 'place' is where a sense of identity is manifested, where physical characteristics of place influence people's notions and sentiments. Accordingly, physical, symbolic and emotional conceptions of place play a big role in forming people's sense of place and attachment. Both of these notions affect people's sense of community, participation, and consequently, response to change (Lyon, 2014, p. 1010). This sheds light on the importance of place attachment, and creating a sense of community in any urban planning and design development efforts. Finally, urban planning and design efforts should always aim for inclusion and social cohesion between the different members of society. This is especially important now as cities grow with greater social diversity. Hence, creating an inclusive public sphere that fosters a sense of belonging among community members is essential for social resilience.

A Conceptual Framework

Socially Resilient Urbanism

The final section of the theory chapter of this thesis aims to synthesize the literature on resilience, and the complexities of the urban fabric. In it I conceive of a conceptual framework that would offer guidance on how to approach the building of social resilience in an urban context. As the social and physical sphere are inherently intertwined within the urban fabric. I combine the key findings on building urban and social resilience in a framework that embraces both, focussing on the assets that build social resilience in the urban environment. They are put in context, within an understanding of urban social dynamics and the multi layered intricacies that influence them. Firstly, I include the concept of 'The Open City' by Richard Sennett, which acts as a bridge between theory and urban design. Secondly, I explain how I interpret the findings from the previous sections, combining the theories into a whole conceptual framework.

The Open City

In the book *Building and Dwelling* (2018), Sennett conceives of cities as Ville and Cite; the built form and how people live in it. This conception resonates with the themes discussed in this thesis about the relationship between the physical and the social spheres within the urban fabric. It is also the way space and place are differentiated, where space is the physical form, and place is lived experience. The relationship is intertwined, and ideally, the built form should reflect societal values, and simultaneously influence ways of living. The multi-layered complexities of the urban fabric deem this relation as not so direct, as the influences are wide in scale and varied. Accordingly, the concept of the Open City proposed by Sennett (2018) aims to reconcile this dilemma, and the relationship between Ville and Cite.

The Open City is a resilient city (Sennett, 2018, p. 287-8). It is one which recognises the complex dynamics that underlay cities, and therefore the need to accept constant change as a reality. Moreover, an Open City is one which enables society to deal with these complexities, for a successful iterative process between Ville and Cite. Sennett (2018, p. 205) describes the Open City through five open forms: Synchronous, Punctuated, Porous, Incomplete, and Multiple. In effect, these forms, brought about though effective urban design, demonstrate a diverse, adaptable, and resilient city.

Firstly, Synchronous describes a kind of space where many activities happen simultaneously, attracting different kinds of people throughout different times of the day (Sennett, 2018, p. 206). Punctuated, is a place of particular character (Sennett, 2018,

p. 211). In cities, they are places that have distinct features, that people can use to orient themselves, and above all, they are places that are inviting. As for Porous, it is a form that brings attention to the edges within city fabrics (Sennett, 2018, p. 218). Sennett refers here to the distinction between borders and boundaries, where the first is a porous edge and the latter is closed (Sennett, 2018, p. 220). Porous borders are edges in the built environment along which different groups of people are invited to interact. Subsequently, the Incomplete form is one which allows for continuous evolution over time (Sennett, 2018, p. 228). It is a type-form which is adaptable and flexible, offering a variety of uses as the needs and uses of society change. Finally, Multiple is a call for dotting similar activities around the city, allowing them to flourish in the different environments that cities host (Sennett, 2018, p. 236). This would allow the city to stitch together a collage of different places that emerge as a result of the interaction between people and the planted type-forms. In conclusion, the different forms of the Open City are adaptable and flexible, they embrace diversity and favour a level of chaos over stability. Moreover, they aim to create engagement and social cohesion, and above all create places for people.

A Conceptual Framework

The framework conceived in this thesis draws from the research on resilience and urban environments, from urban and social resilience theories, social urban intricacies as well as Sennett's description of an Open City. The themes are complementary and enrich the points made to form an overall understanding of what makes socially resilient urbanism. The framework is meant for existing built environments with foundations which provide the basic human needs of shelter and supporting infrastructure.

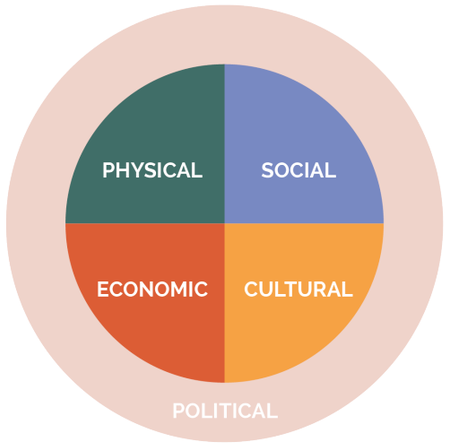


Figure 9: Capitals needed for Social Resilience

Drawing from the previous research, this thesis depicts social resilience as the enablement of society to act, develop, and stir transformations. The built environment plays an essential role in facilitating capacities that can can support building social resilience amongst the community. In this thesis, these capacity giving assets are grouped into physical, social, economic, and cultural assets, within the wider 'political' asset. The thesis recognises the strong influence of power dynamics (Symbolic Capital), as well as issues of inequality, exclusion, and limited access to resources caused by power politics and governance systems in place. Consequently, these are grouped under the overarching 'Political' asset. However, this asset is out of the scope of the thesis, and so will not be addressed in the framework. Following that, Physical Capital refers to the public realm, places that foster a Sense of Place and attachment. Subsequently, Social Capital draws on social connections, a Sense of Community and social cohesion. As for Economic Capital, it is the ability for economic livelihood, and economic independence. Lastly, Cultural Capital, refers to social learning, where the circulation of knowledge and skills are used for local benefit, and learning from past experiences. These are capitals that are embedded in context and can be strengthened through the urban environment.

Urban Tools

The physical, social, economic, and cultural capitals are distilled to urban tools, as attributes within the urban fabric that nourish these capitals. The application of these tools through urban design and planning aims to enhance the urban environment,

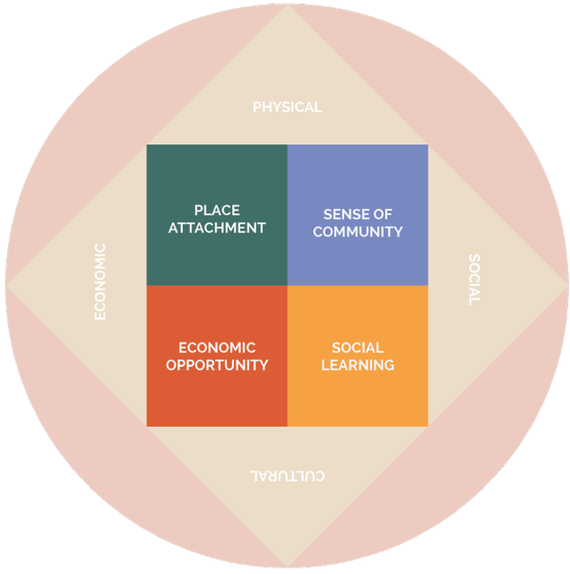


Figure 10: Capacity Giving Assets for Building Social Resilience

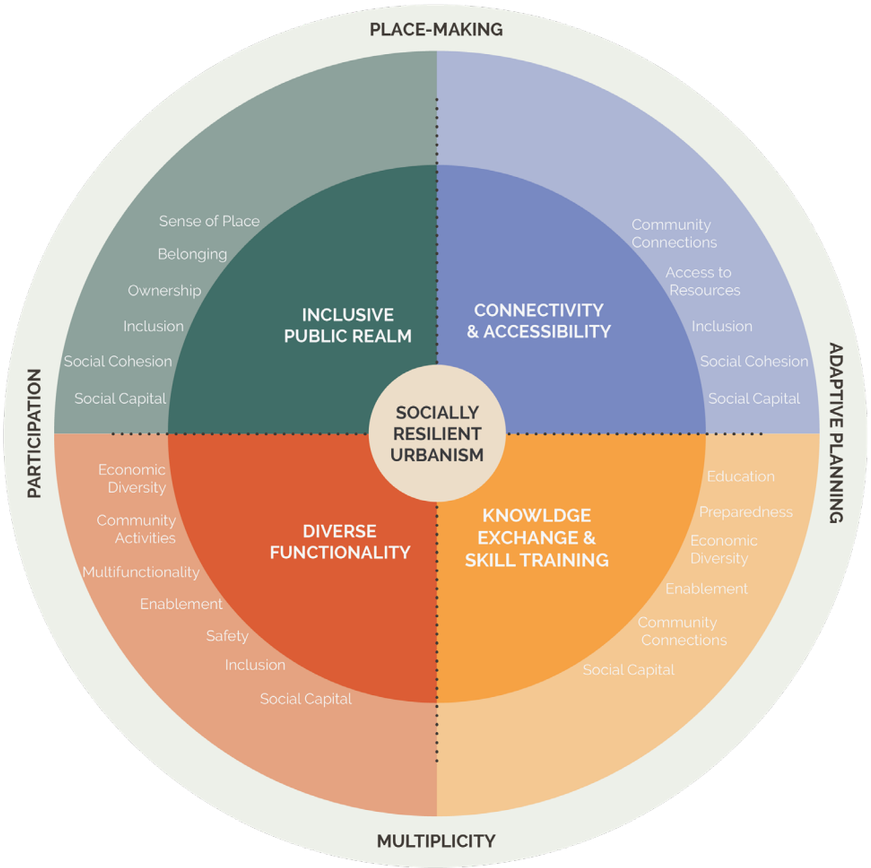


Figure 11: Conceptual Framework: Tools and processes for socially resilient urbanism

facilitating socially resilient dynamics. Since the capitals are all connected, it is difficult to distinguish their boundaries. This has been simplified, however, for the sake of creating a coherent framework into how they could manifest in the urban environment, and into urban qualities that enhance their effects.

Firstly, Physical Capital translates into an Inclusive Public Realm; where streets, public squares, and open space is designed for all, embracing the diversity of people in cities, fostering belonging and attachment. Secondly, Social Capital, a Sense of Community, is reflected through Connectivity and Accessibility. It aims to bring people of different groups together, where areas are connected, isolation is limited, and equal access to places and resources is targeted. As for Economic Capital, it manifests in the diverse functions present in the city by building on existing resources, and finding new ones for economic opportunity. Lastly, Cultural capital, is embodied in knowledge Exchange and Skill Training. It is the communication and interaction between different knowledge groups, and the facilities that allow this knowledge exchange to take place for the benefit of the community. These aspects are all deeply interwoven, as well as their effects on the social functioning of the community and the dynamics of the urban fabric. Therefore, they act as guiding tools that can be interpreted at the local level, according to the context in which they are applied.

Processes

While these capacity giving assets are seen as tools for urban design, they are also influenced by the means in which they are conducted. Place-making, Adaptive Planning, Participation and Multiplicity or Redundancy are all identified as key processes in the design and use of these urban tools.

Place-making is a process of creating places of quality that people want to engage in. The process aims at creating places that foster ownership (Project for Public Spaces, 2007). Moreover, the process relies not only on the professional skills of experts, but essentially on the skills and strengths of the existing community (Project for Public Spaces, 2007). It stems from the idea that each locale is unique, and therefore a successful place is context specific, and engages the community. The Project for Public Spaces, which has been running since 1975, has gathered data from places around the world and defines four qualities that make a successful place: Access and Linkages, Uses and Activities, Comfort and Image, and Sociability. Accordingly, a successful place needs to have a strong visual and physical connection to its surroundings. It should sustain a level of comfort, in terms of cleanliness, a variety of seating as well as perceptions of safety. In addition, it provides space for a variety of activities that people can engage in. Finally, it endorses a strong sense of place and community. Placemaking is a process that is incremental, as people live through the place, and successful place can only be achieved through proper community engagement.
An essential component of Placemaking is participation. It entails the engagement of the community and different stakeholders in urban planning and design processes. In his book The Placemaker's Guide to Building Community (2010, p. 91), Nabeel

Inclusive Public Realm

Connectivity and Accessibility

Diverse Functionality

Knowledge Exchange and Skill Training

Figure 12: Urban Tools for Socially Resilient Urbanism

Hamdi defines participation as "taking responsibility with authority and in partnership with other stakeholders in pursuit of common goals". He describes how people's rights are engrained in participation and therefore there is a need for responsibility from all those involved. Moreover, successful participation requires ownership and commitment, and necessitates horizontal and vertical cooperation between communities, stakeholders, and authorities (Hamdi, 2010, p. 92). Participation is key for community resilience because it redistributes agency, allowing communities to act at a local level, as well as help identify power conflicts (Hamdi, 2010, p. 92). Finally, participation is socially enabling, through reinstating people's capabilities, and trust in their own knowledge (Hamdi, 2010, p. 92).

As explained by Ahern (2011), and Sennett (2018), Multiplicity or Redundancy is about 'seed-planting' (Sennett, 2018, p. 236). It entails having multiple elements providing similar, back-up functions (Ahern, 2011, p. 342). While Ahern (2011) approaches it through the decentralisation of major urban functions, Sennett (2018, p. 236) relates it to the more intricate urban fabric, through planting activities in different parts of the city and allowing them to flourish in different environments. This not only ensures resilience in the sense of not placing 'all your eggs in one basket' (Ahern, 2011, p. 342), but also allows for a complex city fabric that evolves through various diverse communities and multiple identities (Sennett, 2018, p. 238).

Finally, Adaptive planning and design involves an iterative process of design. Where plans and designs are not set in stone, but are rather flexible and adaptable, as 'experiments' (Ahern, 2011, p. 343). In Sennett's (2018) description of open city forms it is the 'Incomplete'. Flexibility is at the heart of the 'incomplete' form, where a design is open to different configurations over time (Sennett, 2018, p. 230). This ensures the reduced risk of failure (Ahern, 2011, 2011,p. 343), as well as ensuring that any plan or design is in concordance with current needs.

In conclusion, the conceptual framework presented here provides tools and processes that aim to offer the urban designer guidelines for approaching the development of urban environments that support social resilience. The Open City concept described by Sennett (2018) exemplifies the values this thesis holds for a city, and translates them through the five open forms. Consequently, to consolidate the theories explained in the previous sections, Social Resilience can be fostered through various assets provided by the environment. These assets are grouped into, physical, social, economic, cultural, and political - with the first four being primarily addressed by the thesis. These assets are intertwined with each other and within the urban fabric, therefore, working together as a whole. Finally, in concordance with previously stated research about the importance of local action and context specific approaches, this conceptual framework requires interpretation at the local scale, depending on the specificity of the context in which it is applied.

Figure 13: Map showing the location of Irbid in Jordan

Part II:

Site: Inner Core of Irbid

The development of the inner centre of Irbid is one of the core parts of this thesis. In this chapter I present a three scale analysis, followed by a SWOT analysis of the inner core. Firstly, I introduce the city of Irbid, its context and history, zooming into the inner core. Secondly, I present the urban fabric analysis of the inner core. Subsequently, the I portray the districts within the inner core. Finally, I produce a SWOT analysis of the inner core based on the points derived in the previous theory chapter. In this chapter I aim to set the foundations for the design chapter to follow.

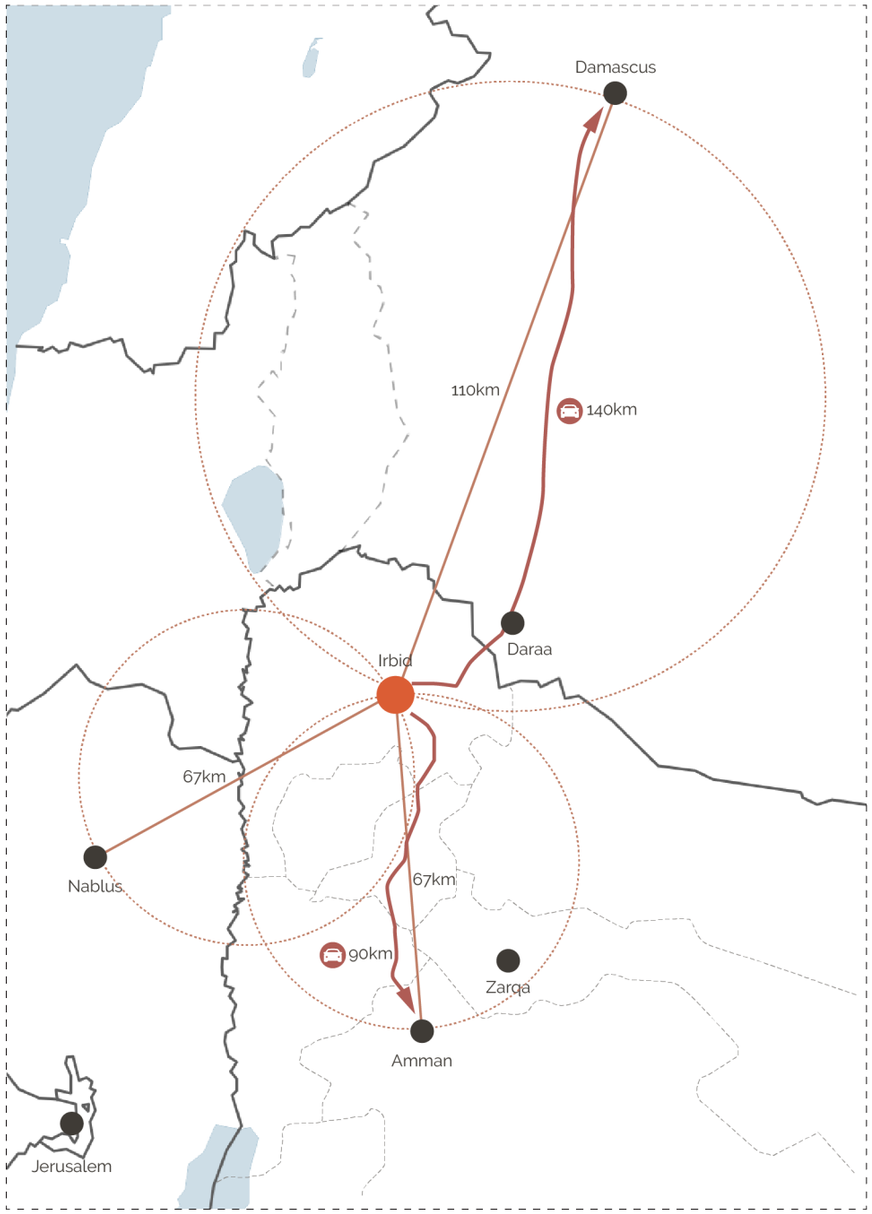


Figure 14: Cities within proximity to Irbid

Context: Irbid, Jordan

Choice of city

The city of Irbid in Jordan holds a special significance at the scale of the country. It is the third largest in population, and considered the hub of the north due to its prime location as a connecting spot for the nearby historic sites, as well as the routes to Syria, and the east of Jordan. It also acts as a central commercial and service hub for the numerous villages surrounding it. Moreover, the city has a diverse population as it attracted families from surrounding countries over the years, in addition to the high number of students due to the main universities it holds. More of the history, context, and assets of the city will be explained throughout the chapter.

Irbid has great potential as a city at the national and international scale. This potential, however, is left unrealised, as there is a tendency for services and economic interest to be centralized in Amman, as the capital. With increasing populations, and more people moving to urban areas, Jordan is in need of decentralization. Through developing a greater diversity of cities that are able to provide residents with a good livelihood, as well as opportunities for development.

The city of Irbid is on a development path that faces many challenges, of which is the confrontation of the traditional and the modern. With this confrontation also come socio-economic demographic changes that are influencing the shape and identity of the city. The current city growth trends have favoured economic input in the shape of big shopping malls and wide street developments towards the south of the city. Thus, greatening social divide thorough city structures that cater for specific socio-economic groups. Consequently, these issues affect the development of the city and society. As the city of Irbid undergoes different changes, its society needs to be equipped with capacities to manage change. Not only in order to persevere through these changes, without losing main functions and identity, but to also be able to steer development in the right path, one that stems from an understanding of local values and needs.

The focus of this thesis is on the inner core of Irbid. It is the oldest part of the city, engraved within its stones is the city and people's history. Therefore, the inner core holds special significance both at the city scale, as well as at the country scale. A development path that is sensitive to its historic fabric is necessary, to meet the need of a modernising society. As for the specific boundary of the study area, it is defined according to previous studies that have been made by the municipality of Irbid. Therefore, making it possible to obtain some relevant information of the area. It is also of an appropriate size that could be studied at an urban design scale, for the analysis and proper understanding of place which was necessary for the thesis.

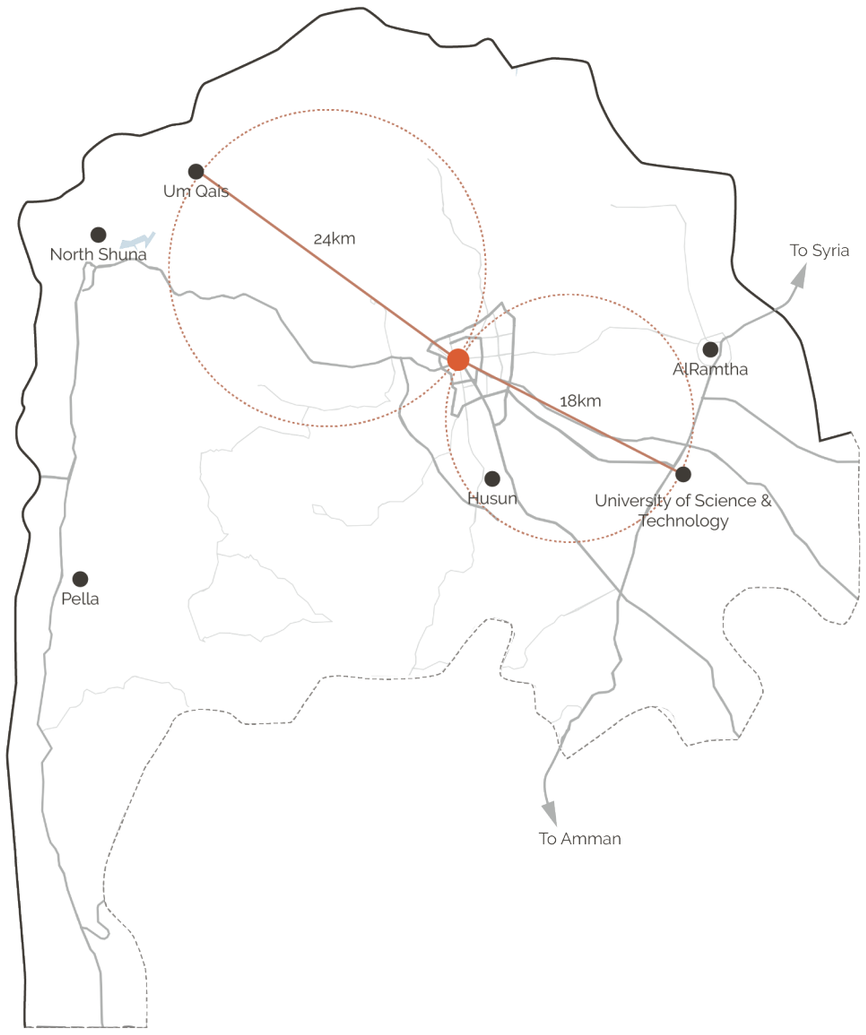


Figure 15: Map of the Irbid Governorate: Irbid and surrounding areas

History of Urban Development

The Irbid Governorate spans an area of land in the north of Jordan encompassing nine districts, which include over a hundred villages and towns, with the city of Irbid as its capital. There is strong landscape topography that separates the governorate from neighbouring countries: the Yarmouk valley to the north, the Jordan river to the west, and the desert to the east. The city of Irbid is 30km away from the Syrian border, and around 65km from Amman, the capital. The population of the Governorate is 1.7million as of 2015 (City Populations, 2017), with the capital, Irbid, counting at 650 thousand according to the municipality statistics (Greater Irbid Municipality). The governorate is the second most populous in the country after Amman, and the city of Irbid is the third most populated after Amman and Zarqa. For clarity purposes, the mention of Irbid refers to the city of Irbid and not the governorate, unless otherwise mentioned.

The area under the Irbid Governorate is known for the beauty of its landscape, archaeological history, and the kind simplicity of its villages. The governorate area sits on rich, fertile land that is enveloped in a moderate climate. The average temperature around the year is 18 degrees, with prevalent winds from the west and northwest, and southern winds in the summer particularly. Naturally, these facts were known over the years, attracting people to reside there for agriculture, making the area famous for wine making especially during the byzantine times, and later for olive oil pressing (Ghawanmeh et al., 2008, p. 27; Greater Irbid Municipality). Nonetheless, the Irbid governorate faces hardships over water scarcity, as does the rest of Jordan, with the average rainfall per year measuring at 479mm (Ghawanmeh et al., 2008). Despite that, Irbid has flourished as a city over the ages, being continuously inhabited and developing. Accordingly, it is often referred to as the 'Bride of the North'; a literal translation from Arabic illustrating its prominence in the country, its beauty, and the dear place it holds for its people.

History of Civilisations

The city of Irbid in its current built form is relatively recent, whereas the land has seen several rules and civilisation over the centuries. Its prominent location to the south of Syria, and east of Palestine, placed it on the main trade routes over millennia, and with that grew its economic significance as a trade centre. Some artefacts found in the area date back to the Bronze age, and over the centuries the city has been part of the Roman, Byzantine, Islamic and Ottoman empires, until the dissolution of the latter in 1918. The Great Arab Revolt ended the Ottoman Rule in the region, in consequence forming the borders we know today, different governing systems, and the changing demographics which would mostly affect the current urban fabric of the city of Irbid.

Figure 16: Map of Irbid highlighting the Inner Core and Yarmouk University

The city's name, Irbid, stems from the Greek word Arabella, which was how the city was known since the Bronze age and until the Islamic era (Ghawanmeh et al., 2008). The ancient Tal of Irbid, the hill, is the highest and oldest point in the city. Dating from the Bronze age, the city claimed the top of the Tal, enclosed in a basalt stone wall and overlooking agricultural lands. Subsequently, the wall was reconstructed in the Iron age, and some fragments remain to this day (Ghawanmeh et al., 2008, p. 13). Artefacts show that there was also civilisation in the village of Husun (Ghawanmeh et al., 2008), which is now a small town to the south east of Irbid. Agriculture, pottery making, and trade are prevalent then, and would continue in the following centuries.

The Irbid Governorate covers an area of lands and cities that once formed part of the Decapolis. It formed a league of ten cities under the Roman empire that grouped together for cultural, economic, and safety reasons (Greater Irbid Municipality). Damascus was the northernmost city in the Decapolis, while Philadelphia (modern day Amman) was farthest south. Some references state that Arabella, Irbid, was also one of them (Greater Irbid Municipality). Pella and Gadara (now Um Qays) were members of the Decapolis, both sites at close proximity to the city of Irbid, they boast important historic and archaeological ruins that are frequented today by tourists and researchers alike. Above all, Irbid was an important transport hub along the trade route connecting east to west; Mesopotamia to Egypt, as well as the route north to south connecting trade between Europe and Mecca in the south, where merchandise from India and the east was collected (Ghawanmeh et al., 2008, p. 13). Irbid would remain influenced by its surrounding city connections and political dynamics throughout the coming centuries.

Irbid became part of the Islamic Empire in the year 633 (Ghawanmeh et al., 2008, p. 27). Over the different Islamic rules, Jordan's development would rise and fall according to its proximity to established capitals. The influence of Damascus over Irbid particularly would continue and is strengthened especially in the Ayyubids and Mamluks empire, under which Jordan, Syria and Egypt were unified within the province of Damascus (Bakhit, Pascual and Mundy, 2013). Furthermore, Irbid would continue to be on the transport and trade routes connecting east to west, and north to south; a passing spot for traders, pilgrims, travellers, and soldiers (Ghawanmeh et al., 2008, p. 41). The trade route from Syria to Mecca now also coincides with the main Hajj route, the Syrian Pilgrimage route, which also passed through Irbid. Consequently, souks (marketplaces) were established in Irbid, where passers-by would stop to rest and buy essentials. Different trades and the souks around the mosque would remain a strong part of the culture of Irbid to this day, as it continues to serve as a trade centre for the surrounding villages. Thereafter, centuries of Islamic rule over Irbid end on the hand of the Ottomans in 1516, making Jordan part of the Ottoman Empire (History - The Hashemite Kingdom of Jordan, 2001)

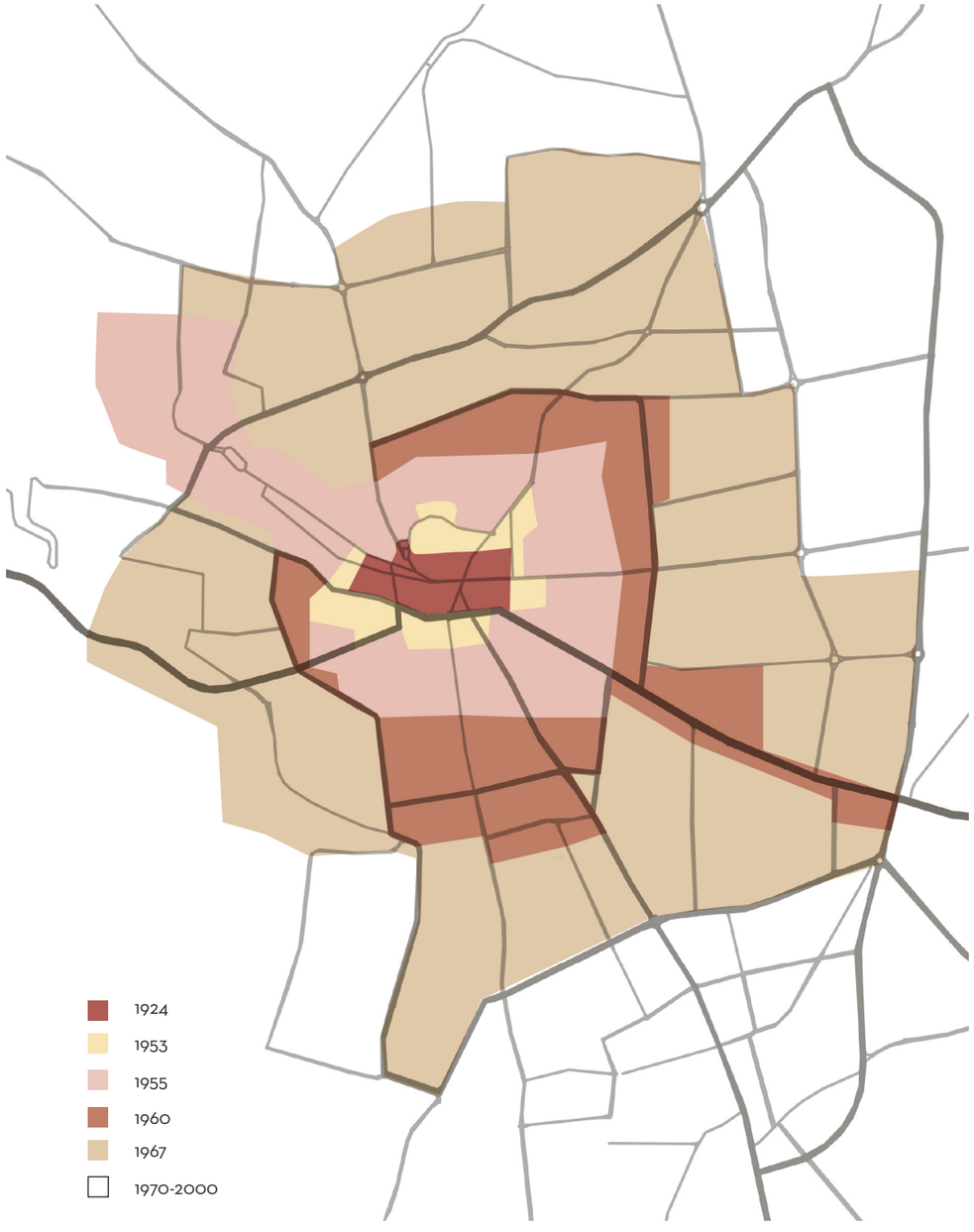


Figure 17: Stages of growth of the city from the twentieth century

Irbid under the Ottomans

The Ottomans would rule the area for the following 400 years (Jordan - History - The Ottoman Empire, 2001). Development in Jordan under the Ottoman empire is regarded as slow, as the area was seen mainly as a transit zone to the holy sites in Mecca (Jordan - History - The Ottoman Empire, 2001). Nonetheless, it was a stable time under which the land now Jordan continued to belong to the Province of Damascus, mainly under the sub-governorate of Ajlun. The Sultans and Governors of Damascus paid special attention to developing the necessary infrastructure for the Syrian Pilgrimage route to Mecca (Bakhit, Pascual and Mundy, 2013). Accordingly, they built several caravanserais along the route in order to house the travelling pilgrims, and sometimes soldiers. Coupled with water infrastructure, these structures were in the form of castles and fortifications which protected their residents from Bedouin attacks. Of such fortifications is the Saraya building in Irbid, erected in 1885 on the southern slope of the Tal. As Irbid was under the sub-governorate of Ajlun, relatively more accurate information on the development of the city and its demographics from the 1800s is collected from the tax register book of the Ajlun sub-governorate (Ghawanmeh et al., 2008).

In the early 1800s, under the Ottoman empire, Irbid was a small-town settlement located to the south of the ancient Tal. The population of the town of Irbid in the late 1800s is estimated at 700, with the surrounding villages counting 4000 people (Ghawanmeh et al., 2008, p.85). The documents show that the average household number was seven people (Ghawanmeh et al., 2008, p. 85). The number of shops in the area in the late 1800s indicate the prominence of the town as a trade centre in the region, servicing travelling traders, as well as neighbouring populations (Ghawanmeh et al., 2008, p. 85). It follows that its position as the trade centre of the north was established since then, attracting families from Damascus in Syria and Nablus in Palestine to move there for business. Irbid's population would rise to 2000 at the turn of the century, continuously increasing with the migrations of people and refugees over the years. Accordingly, the population of Irbid in the 1900s was quite diverse, with many Muslims, Christians, as well as Syrians, Palestinians, and Kurds residing in the area. The early years of the 20th century, between 1905 and 1918, Irbid was an increasingly popular location amongst traders and craftsmen, attracting known families for trade, until the dissolution of the Ottoman Empire (Ghawanmeh et al., 2008, p. 76).

A Growing Town

The year 1918 marks the end of the Ottoman rule in the area through the Great Arab Revolt. Thereafter, the land of Transjordan was a disputed territory, initially under the government of Damascus established by the Emir Faisal, then under the British mandate, until Transjordan was formally established by Emir Abdullah as a British protectorate in 1921 (Jordan - History - The Ottoman Empire, 2001). The land of Transjordan united the three local administrative districts that were formed under

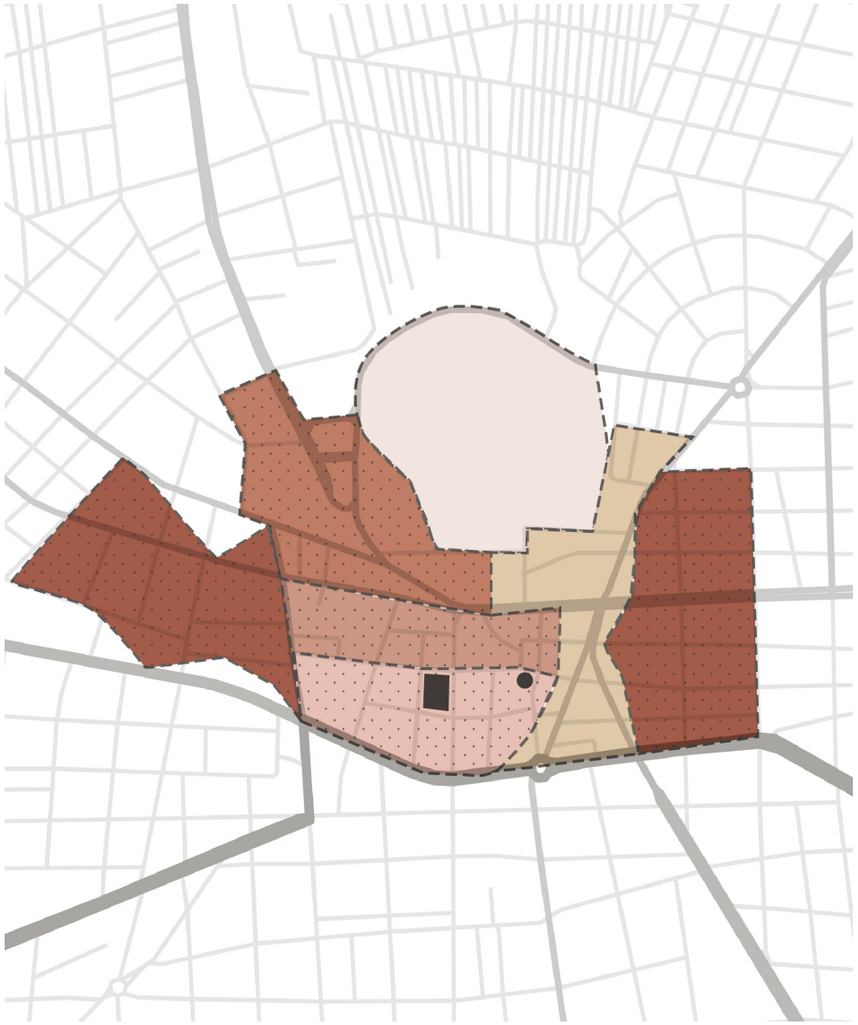


Figure 18: The inner core area and its five Harat (districts)

the British mandate; the northern district of Ajloun with Irbid as its administrative centre, Balqa district in the centre with its base in Salt, and the southern base in Karak (Jordan - History - The Ottoman Empire, 2001). The aftermath of the Great Arab Revolt caused not only political, but also demographic changes in the area that would in turn affect the development of the emerging cities.

The period between 1921 and 1946 was a time of institutionalisation for establishing Transjordan, and that was evident in the urban growth of the cities. Irbid played a major role in the formation of the Jordanian modern state, with its commercial, cultural, and business activities, in addition to its connection to the multiple villages in the north (Haddad and Fakhoury, 2016). With the formation of Transjordan, more people moved to the growing cities. Concurrently, the Franco-Syrian war in 1920 caused many Syrian families to move to Irbid at that time. Irbid's population was recorded at 3500 in 1922, and that number would rise to 15000 in 1937 (Ghawanmeh et al., 2008, p. 99).

The 1920s is the period that forms the foundation of the urban fabric of the current modern city (Haddad and Fakhoury, 2016, p. 39). The 1920s mark a steep rise in populations, and most importantly, the prevalence of cars in the city. In addition to that, urban functions such as cafes and hotels start appearing in the city (Ghawanmeh et al., 2008, p. 76). Irbid's growth was mainly around the central Tal, which forms a landmark in the city and had played a prominent role in the urbanisation process of the city (Haddad and Fakhoury, 2016, p. 39). Since the late 1800s, property register records show that it was made up of five neighbourhoods towards the south of the Tal; the Upper Harrah, the Middle Harrah, and the Lower Harrah, which were named 'Harrat al Qasabah' (Haddad and Fakhoury, 2016, p. 39). In addition to that, there were the Eastern and Western residential neighbourhoods (Ghawanmeh et al., 2008, p. 100). The urban fabric development was influenced by cultural Islamic ideas; the mosque was at the centre of the residential agglomeration, around it also grew the souk, and residential fabric (AlTa'aani, 2008, p. 35)

The Tal of Irbid did not contain any residences. It mainly consisted of public buildings, such as schools and a mosque, the Ottoman Saraya building. Most importantly, the Tal acted as the administrative district of the city, containing the municipality building, as well as the security centre (Ghawanmeh et al., 2008, p. 100), a reality that is still true today. As for the surrounding neighbourhoods, they were hierarchically divided in terms of wealth of the residents where the Upper Harrah, closer to the Tal, mainly housed wealthier families, many of whom were even educated abroad in neighbouring countries (Ghawanmeh et al., 2008, p. 76). This hierarchy of residences, with wealthier families living in proximity to the administrative centres seemed to be a tradition in the emerging Jordanian cities (Ghawanmeh et al., 2008, p. 76). The other districts in Irbid would house more residents and more merchandise trading and souks, both daily and weekly markets. In addition to that was the main square of the city, Al Hisbeh; the square now occupied by the main vegetable and fruit market structure was previously common land not owned by a particular

family, therefore making the place where celebrations took place (Ghawanmeh et al., 2008, p. 76). In all, Irbid at this point could still be considered a growing town, with five main neighbourhoods, a main square, and markets.

The Vernacular and Beyond

The architecture of the area reflects the needs of its residents, their use of local material and knowledge. The local black basalt stone was used as building material and paving. Most houses were one storey high, entering into a small, planted food garden, called the 'Hakura', where animals were also sometimes kept. There was also often a well in the garden, a 'Kharazeh' to collect rainwater, and the rest of the rooms, usually three to five in each house, would follow inside (Haddad and Fakhoury, 2016; Ghawanmeh et al., 2008, p. 76). This vernacular was the main style found for most houses in the city, except for the Damascene family homes which would stand out. The wealthier Damascene merchants' homes were built of stone and reinforced concrete roofs, and in plan they centred around a paved courtyard onto which most rooms of the house would open (Haddad and Fakhoury, 2016; Ghawanmeh et al., 2008, p. 76, 100). A few houses in this style remain in the inner core of Irbid such as the Arar residence and Al-Nabulsi house.

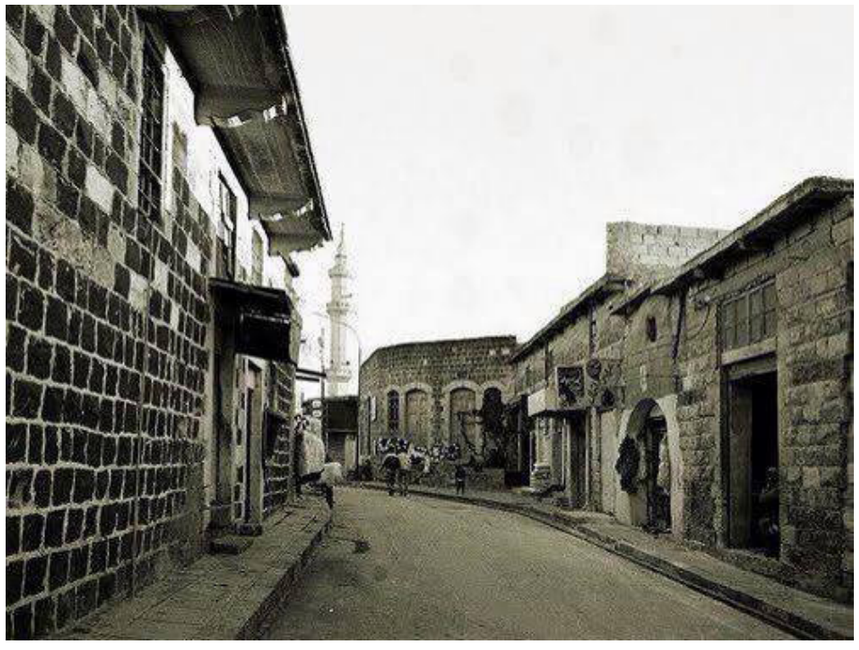


Figure 19: Khan Haddu Street in the inner core (1960s-70s)

Source: https://www.historyofjordan.com

The year 1927 marked a change in the built form of the city, when an earthquake destroyed some of the existing stone buildings. When reconstruction took place, this time it used reinforced concrete for the renovations, as well as for new bigger buildings (Haddad and Fakhoury, 2016; Ghawanmeh et al., 2008, p. 76). New houses now also had water plumbing (Ghawanmeh et al., 2008, p. 76). In turn, the role of the municipality also changed, becoming more prominent and taking responsibility in building the city infrastructure, buildings, as well as street expansions (Ghawanmeh et al., 2008, p. 76). These changes affected prices in Irbid, there was more interest in real estate, attracting more people to move to the city, and hence increasing business, trade, and urban growth (Ghawanmeh et al., 2008, p. 76). Nonetheless, the development of Irbid so far was conditioned by local social, economic, and political dynamics.

Demographic Change

The city's development would take a turn in the 1940s, affected by the greater politics in the region, a surge in population, and the pressure to adapt. In 1946, Transjordan became independent and was officially named the Hashemite Kingdom of Jordan, under King Abdullah the first. The politics of the region in the coming years would cause the arrival of a wave of Palestinian refugees fleeing the Arab-Israeli war in 1948. The Palestinians were dispersed around the country, and some of them would reside in Irbid. The population of the city was estimated at 17000 in the 1940s, and the Palestinians who would reside in Irbid were estimated to be 4000 refugees (Ghawanmeh et al., 2008, p. 100). The refugee camp was established to the north of the Tal, behind the city. In the beginning of the 1950s, people started replacing their tents with reinforced concrete. What was once a small, thought to be temporary settlement, discarded behind the hill of the old city, is now built in concrete, and with the city growth around it has become one of its neighbourhoods. The arrival of the refugees caused a sudden increase in population in the city and added strain to its development. The city was not prepared for this change, neither economically, nor in infrastructure, nor in urban planning logistics (Ghawanmeh et al., 2008, p. 100).

Urban Dynamics

Following the demographic changes that Irbid saw, the inner core area would evolve accordingly. The surge in population, particularly with the refugee settlement, naturally caused an increase in economic and commercial activity in the city (Ghawanmeh et al., 2008, p. 105). More people from the surrounding villages were attracted to the city, seeking better livelihoods (AlTa'ani, 2008, p. 38-39). Demand for residence in the city increased, and consequently the city grew swallowing surrounding agricultural lands, claiming them as new residential neighbourhoods (AlTa'ani, 2008, p. 38-39). Simultaneously, old residential buildings in the inner core were being converted into commercial use, or else, demolished. The 1950s-60s saw the establishment of the vocational school on the Tal, as well as the transformation of the

Figure 20: Hashimi street in the inner core, Juma'a House to the right (1950s)

Source: https://www.historyofjordan.com

Figure 21: Street in the inner core (1960s)

Source: https://www.historyofjordan.com

main square in the centre to the Hisbeh vegetable market it is now (Ghawanmeh et al., 2008, p. 105). This was the time when the inner core's built form was intentionally manipulated, when old buildings and crooked streets were torn down to make space for wider, parallel streets lined with commerce (AlTa'ani, 2008, p. 38-39).

Socio-economic and spatial changes continued to interweave. The social divide that existed became exaggerated with the increase in population. When the city's economy was once governed by small scale, local forces, it was now being manipulated by a complexity of effects, including larger political matters (Ghawanmeh et al., 2008, p. 105). Yarmouk university was established in 1976 attracting students from around the country, who often moved with their families (Abo Zayed and Simpson, 2019). Subsequently, the social dynamics that followed set the mark for the socio-spatial fragmentation that manifests in the city until today. Most incoming students, their families, as well as middle-income families who previously resided in the inner core, now live to the south of the city, around the university buildings. Following that, the inner core is characterised by its low-income inhabitants, attracting working class residents of Jordanian and foreign origins (Haddad and Fakhoury, 2016, p. 40). In addition, the city would see yet more strain on its infrastructure with the turmoil in Syria which attracted around 400,000 refugees to the Irbid Governorate area (mainly between 2012-2016), of which around 100,00 now reside in the city (Abo Zayed and Simpson, 2019). Accordingly, the city faces increasing pressures which all have their effects on the built environment and social dynamics.

The city of Irbid has had a long history of human settlements. The built form we see today, however, is mainly the consequence of developments seen since the end of the 19th century. The city has experienced a wave of changes over a relatively short period of time, which forced it to grow from a small town to a city within a few decades. Throughout its history, the inner core of Irbid is identified as a trade hub servicing resident as well as surrounding villages. As urban dynamics changed, and the city faced increasing pressures for which it was not prepared, socio-spatial dynamics in the city changed. The inner core retained its identity of trade, as well as its importance at the city and governorate scale. Nonetheless, a lack of central planning, and strategies to deal with the influx of challenges has left the inner core under immense strain. In essence, it needs to adapt to the changing needs of the city, without jeopardising its identity.

The history of Irbid's development presented in this chapter aims to contextualise the city of Irbid, clarifying the variety of forces and conditions that have led to the current form of the city. It offers a backing foundation to the urban analysis to follow, as well as a deeper understanding that leads the design chapter.

Figure 22: Map of my daily route during fieldwork

Fieldwork

For the fieldwork, I spent a total of two weeks in the city. I stayed at my grandmother's house which is 2km away from the inner core, the area of study (see Figure 22). I walked there everyday, some days with a specific objective, and others to get a sense of the place. During this time, my main aims were to get the necessary documented information from the municipality, to get to know the inner core and identify its main strengths and weaknesses, to talk to a diverse range of people, understand their impressions of the city, as well as their needs.

In the following sections, I document my main findings. Firstly, I shortly narrate my experience in the city. Subsequently, I present an analysis of the urban fabric combining findings from my fieldwork, information obtained from the municipality, as well desk reviews of other studies. Finally, I present a SWOT analysis of the inner core, in concordance with the conceptual framework produced previously.

Personal Experience & Reflections

Irbid is an hour's drive away to the north of Amman. My father drove me there for my two weeks stay with my grandmother, my basepoint while I do the fieldwork for this thesis. Irbid is the city my father grew up in, his family had a house in the old centre near the old post office. But as most middle-class families, for over 20 years now, they had moved a bit further south, to a house near the university area.

As a fresh graduate, my father, also as most youth of his age at the time and until now, moved to Amman for better job opportunities. My childhood weekends were mostly spent in Irbid, where the family would gather at my grandmother's house. Me and my cousins would spend our time playing in the big garden or sitting on the terrace with the others. We never really left the house, only to some restaurants around the area. I never really knew the city until I spent these two weeks there for this field trip.

Dad was excited about my project, of course. On the way there he was keen on telling me about the places we were passing by, mainly the names of the areas, the communities of people who lived there, whether Christian or Muslim, or sometimes, refugees. We talked about urban growth as well, which was sometimes obvious in how some villages would grow, swallowing land and merging with others over time, such as what is happening between Husun and Irbid at the moment. The boundary between the town of Husun and the city of Irbid is now not more than a suburban residential area.

As we passed through Husun, the town my dad's family originally comes from, I enjoyed watching the streets from the car window. The shop fronts, usually spilling out to the pavement, people walking, or sitting around, the busy streets, the edges where buildings meet ground, the glaring sun, the many cars, and how it all fits together to create the specific quality of the area. This was more or less the town high street; the buildings here are relatively new, the colour of stone was still a bright white. The buildings were of an arcade typology, with the shop fronts recessed inside, and people sometimes sitting in the arcade. With the sun shining strong, and the heat we felt even in the car, the arcades made so much sense, offering shade and protection.

It was not long till we were in Irbid. The sense of being in a vibrant city is immediately felt. The route we took passes through the university area towards the south of the city first, and so the first image of the city is that of many cafés lining the streets, many extruding their canopies out, eating up the pavement in doing so, students walking around, under the heat of the sun, many cars honking and clogging the street. We finally arrived at my grandmother's house. It feels like a small haven from the experience of sounds and heat and energy outside. This oscillation between the peace at my grandmother's house and the intense city outside is what I experience for the coming two weeks of studying the inner core.

It is just under a thirty-minute walk from the house to the centre, my area of study. I had planned to do that journey daily, taking in the surroundings, and analysing the different areas. The first day of exploring the city on foot, however, with my sketchbook and camera at hand, was when I realised that my expectations for my stay here were far from reality. Wandering the streets alone, as a woman, not accompanied by anyone and not wearing the hijab (headscarf) was not a common site in the city. I was so overwhelmed by the multitude of things happening around me, of the city structure, of all the shops, and signs, the people, the constant honking sounds, the heat, and above all the fact that I could not escape it anywhere. The city centre had no place that would shelter me from the noise, the heat, or other people. My hopes of stopping in different areas to sketch and observe were not met either, I felt too alone, and uncomfortable to linger anywhere for long. Thinking of it in hindsight now, it was one struggle that I had not taken into account. I knew it would be challenging to do the fieldwork, and I felt some pressure of getting all the information I need to do the analysis, to observe and get a feel of the place, but I had not considered that being a woman, and alone, would be an obstacle. The experience I had on the first day could be described as a culture shock, in my own country, with people speaking my language, in a place where I least expected it. But like all challenges, it was a turning point that also helped me advance.

Things unfolded more smoothly in the coming days. Some moments were harder than others, but I had adjusted my expectations, going to the site more prepared and tried to do it with more focused and planned purpose. After some exploration, and being a lot more comfortable with my surroundings, I did eventually find a safe haven also in the city centre. It was the courtyard of Beit Arar. The old Damascene style building used to be the celebrated poet's house, and is considered heritage now. In the coming weeks I would

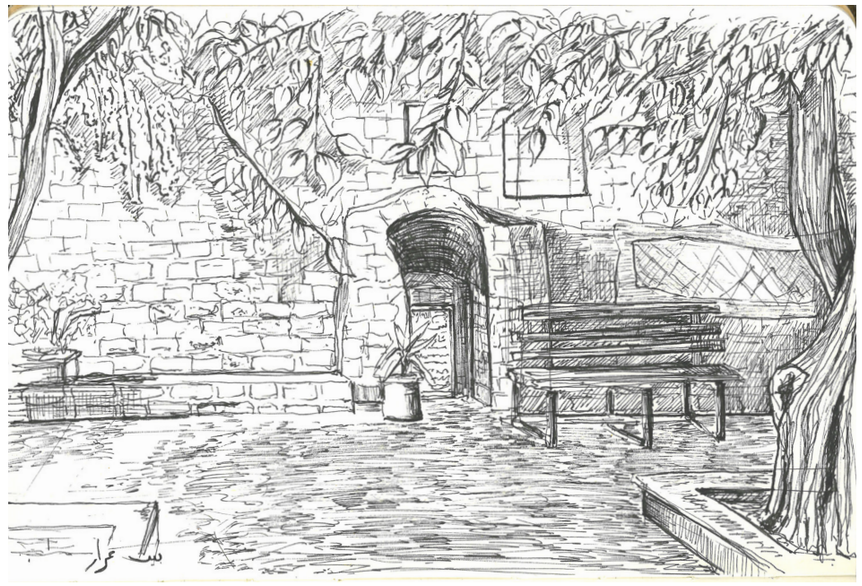


Figure 23: Sketch of the courtyard in Beit Arar

spend most of my breaks in the quiet, shade of that courtyard, framed with the black and beige textured stone, and sheltered with clouds of dense leaves. I was surprised every time, to find myself alone in a refuge like this.

People, mainly boys and men, loved to be photographed. That was also an opportunity to have small conversations that made the area feel a lot less hostile to a young female wanderer. People I talked to were interested in what I was photographing, why Irbid, and of course excited about the possibility that their faces might appear on television somewhere (why else would anyone be photographing them?!). As soon as I took the camera out, they would rush to me with suggestions of things to photograph in their beloved city. It was obvious that not many tourists come here, let alone anyone holding a camera and specifically photographing the city.

As I grew more accustomed to the environment, it also became easier to approach people, I felt less of a stranger. My first interviewee was a young woman who lives close to Beit Arar. We sat in the courtyard and I asked her the questions I had prepared. The topic of being a woman in the area of course came up, she feels uncomfortable more often than not. It gave me a sense of solidarity to hear that from a local woman, that somehow it was not only subjected to me as a foreigner. As I spoke to more women, it also made me realise the privilege I had. I had an anonymity card that none of the women residents could have. No one knew me in the area. Despite the attention I received because of it, it still meant that I had a level of freedom that the other women could not enjoy.

Figure 24: View of the city from an apartment on the Tal

One evening as I was walking through the Tal area taking pictures while the sun's warm, setting rays coloured the buildings, I was invited to a family's home to take pictures from their panoramic balcony. They had a view of the whole city from their humble apartment. I sat there having coffee with the mother and daughter, as they explained to me that even though the city is growing, it still has very much a village feeling. Everyone knows each other, at least in the centre. They explained that it is still a very conservative culture that is heavily affected by its proximity to the surrounding villages. I experienced what they described to a certain extent in Amman, where people of the same social circles were closely bound, but this seemed to be another extreme, which also controlled life in the public sphere.

The difference in atmosphere between the inner core and the university area was evident every evening as I approached my grandmother's house again. Being close to the university, there was a bigger diversity of people on the streets. Unlike the cafés in the centre, which were mainly for men, I could sit alone in the ones on University street. A couple of times, when I had the company of friends or family, I stayed later towards the evening in the centre, past 8 pm when the shops close. More people sat in Fouara Plaza, as the sun set it was beautiful, calm, and breezy. The shopping streets were mostly empty however, there was nothing for anyone to do there anymore. Walking back one warm, dark evening, I was among the many families on the pavements, strolling down University street, where vendors, cafés and restaurants lined the edges, people grabbing cold juice and snacks on the way, the car honks never ceasing to fill the background.

Other than getting a sense of the place, one of my objectives was to get an interview with an architect or planner in the municipality. I wanted to hear their opinions on the city, what their main struggles are, what plans there are for the city's development. I went to the municipality building and was very optimistic when I got in contact with one of the main architects. It was again, however, not what I expected. The office was far too busy with people walking in and out constantly. There was no space for a proper conversation, and I could barely even get the necessary documents I needed to continue my research from Helsinki. It took a few visits to the municipality, a lot of patient waiting, and the luck of meeting a kind and helpful architect that I managed to get at least an AutoCAD file of the buildings in the centre. I managed to also get an insight to some studies they had done on the centre, which would prove useful later in my own analysis. There were plans to regenerate the inner core, and the municipality had previously identified boundaries of study, which I would also later rely on for my analysis.

Towards the end of the second week, I had a range of different experiences and emotions behind me. There were many struggles, I constantly had to readjust my expectations, keep myself motivated, and try to overcome the 'overwhelmed' feeling I so often had. It was a very rich experience, and in some instances felt a lot longer than two weeks. I had met very hospitable and kind people, with whom I shared conversations, cups of coffee, or cold juice, photographs, and warm memories of the place. I felt that I had collected a lot of information that needed processing, and so was reassured that the two weeks had passed with some success. I left with a deep appreciation of the place and its people, and a sense of both motivation and responsibility for what could come out of the research I produce.

Figure 25: Sketch of a street leading to the Inner Core

Urban Fabric Analysis

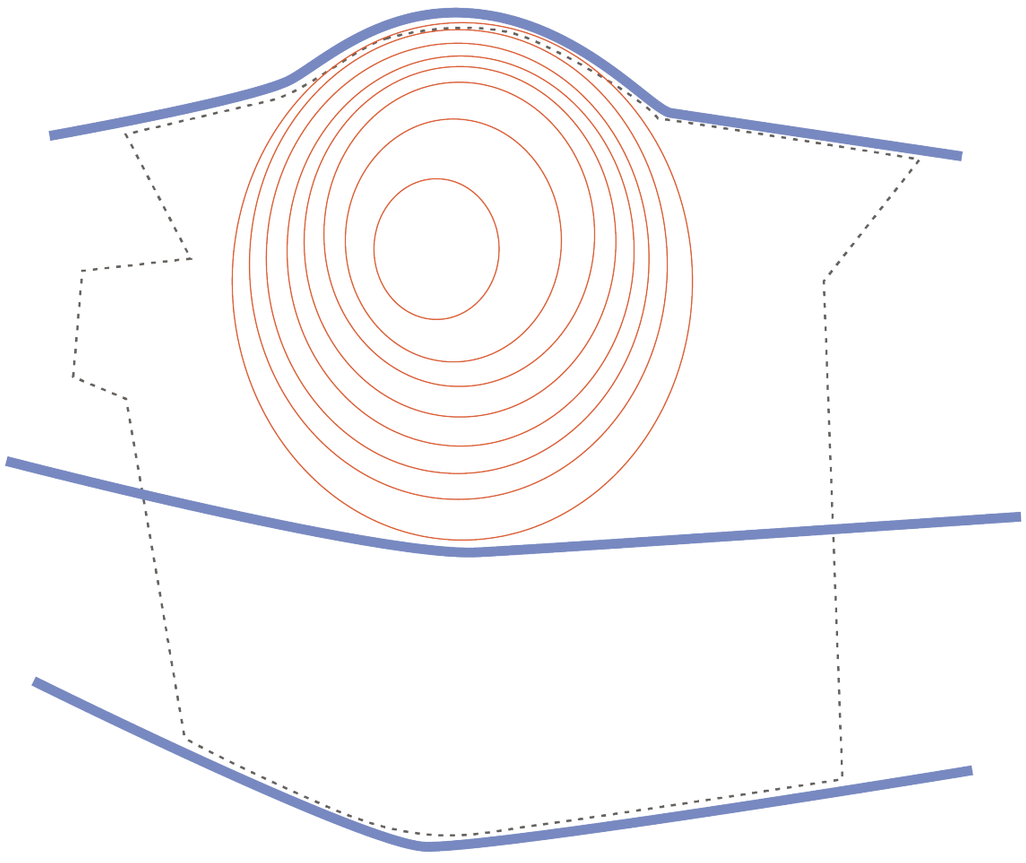
Inner Core Study Area

The next section presents an analysis of the urban fabric in the inner core of Irbid. It comprises scales two and three of the analysis I undertook. Firstly, the different layers of the urban fabric are analysed. Subsequently, a deeper presentation of the different districts within the centre are presented to give the reader a sense of the place.

It is based on observation, interviews, and photographic information that I have collected during my stay there, as well as information I obtained from the municipality and some other published studies.

The boundary of the study area was set according to previous studies held by the municipality, it is slightly shifted to include areas that I thought were important. Not many studies have been made or published about the city, making it difficult to obtain accurate information. It was for that reason necessary to start with an area that had been studied, for access to information. In addition, the site area was appropriate and manageable for the urban scale I wanted to work with.

Figure 26: Existing plan of the study area



Site Edges

The Tal is the main Hill in the centre, around which the city grows. To the back of the Tal, on Al-Khuloud Street is a cemetery, and behind that where the Palestinian refugee camp was set. To the south of the Tal is Hashimi Street, a main road dissecting the inner core, connecting east to west of the city. The southern most edge of the study site is Palestine Street, another main road which branches out connecting the inner core with various districts and villages.

The difference between a path and an edge, as defined by Lynch (1960, p. 49), is that a path is a route along which the observer navigates through the city. Whereas an edge is a boundary between two spaces (Lynch, 1960, p. 62). In Building and Dwelling, Sennett (2018, p. 219) differentiates between a border and a boundary. He describes a border as a porous edge, while boundary is not. An open city, as he describes it, is one with borders, where different groups interact (Sennett, 2018, p. 219). The identified edges in the inner core act more like boundaries than borders. Al-Khuloud street to the north, framed by the walls of the cemetery and the topography of the hill, divides the city from the camp. Meanwhile, Hashimi and Palestine street are clogged with cars, making any traverse a challenge.

Figure 27: Edge as boundary. Al-Khuloud street dividing Tal from the cemetery and the camp behind

Main Hill

Main Streets

Figure 28: Site topography and edges

First Grade Heritage

Second Grade Heritage

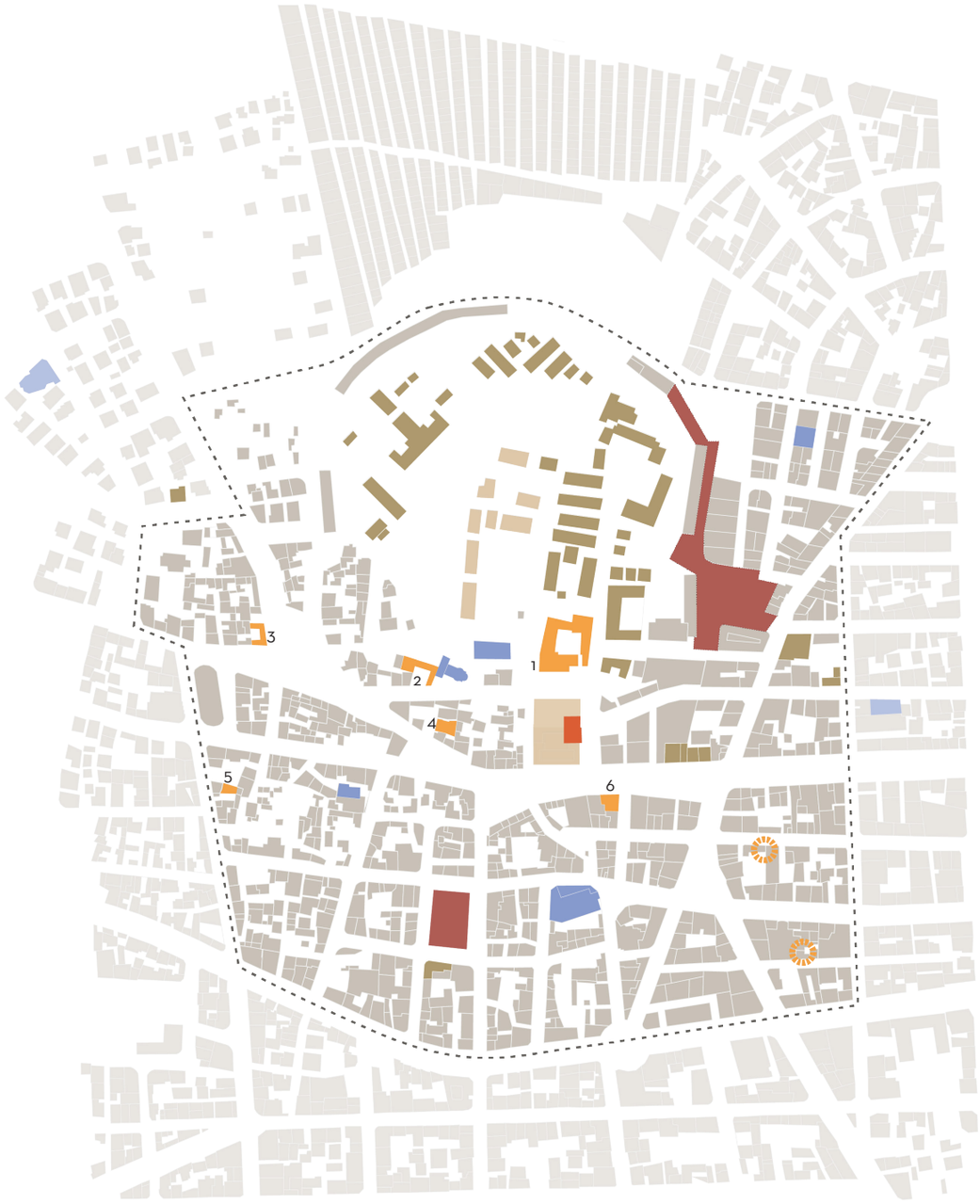
Figure 29: Heritage buildings in the inner core, based on a study by Al-kheder et al., 2009

Historic Layer

There are a few distinctly historic buildings in the area that are appreciated for their beauty and form part of the urban heritage. Particularly, the Saraya museum on the Tal, the central mosque, and some of the old houses are all of main importance. Of the residents, the house of the notable poet Arar, as well as the Nabulsi, Sharairi, and Juma'a Houses are all deemed as heritage, and there have been plans for their reuse (Haddad and Fakhoury, 2016, p. 41).

Due to poor planning policies, the urban heritage is not properly maintained (Haddad and Fakhoury, 2016, p. 45). There is poort visual and physical connectivity between them, and in some cases the buildings have been left abandoned (Haddad and Fakhoury, 2016, p. 41). In their paper on the development and conservation of the heritage in the inner core of Irbid, Haddad and Fakhoury (2016) call for a sustainable heritage plan, which would strengthen the traditional cultural identity through renovation projects of the existing sites, as well as better connectivity between them. Consequently, a regeneration plan would strengthen local identity, tourism opportunities for Irbid, as well as socio-economic development (Haddad and Fakhoury, 2016, p. 49).

Figure 30: View of Arar house, Church and Mosque on Tal



Public Buildings

The Tal has accommodated public and administrative buildings over the ages. In this day it holds several school buildings, the Saraya museum, a security centre, as well as the church, mosque, and Beit Arar. There is one public library, which resides within the municipality building. Otherwise, the cultural buildings are scattered, and remain along with the library, relatively hidden to the wanderer.

Irbid's inner core was home to two cinema halls in the past, which played an important role in showcasing not only movies, but also theatre, dance, as well as holding some political activity (Shoqaeri, 2019). They held a significant place in the centre, and until now the locals refer to the streets they were on as the 'Cinema Street'.

Some architects and academics have called for the adaptive reuse of some of the historically important residential buildings (Fakhoury and Haddad, 2017), and there have been some efforts to implement them. At the time of my visit, however, the efforts had not been successful yet as the buildings were mostly empty and not in use. Below is a short explanation of the numbered buildings:

1. Saraya Museum: functioning museum showcasing the history and artefacts of the Irbid governorate.
2. Beit Arar: the old residence of the celebrated poet Arar. It is now a museum dedicated to his life and work.
3. Nabulsi House: 1920s residential building. Refer to next section (Figure 32).
4. Sharairi House: 1900-1920s residential house. Proposed to be a museum of political history (Fakhoury and Haddad, 2017, p. 202).
5. Al-Kreizem Convention House: a personal initiative to conserve the cultural heritage of the inner core.
6. Jum'a Townhouse: a 3 storey townhouse, with commercial facilities on the ground floor (Haddad and Fakhoury, 2016, p. 43).

Historic - Cultural
Library
Administrative
Schools
Mosques - Church
Main Open Markets
Old Demolished Cinemas

Figure 31: Public Buildings

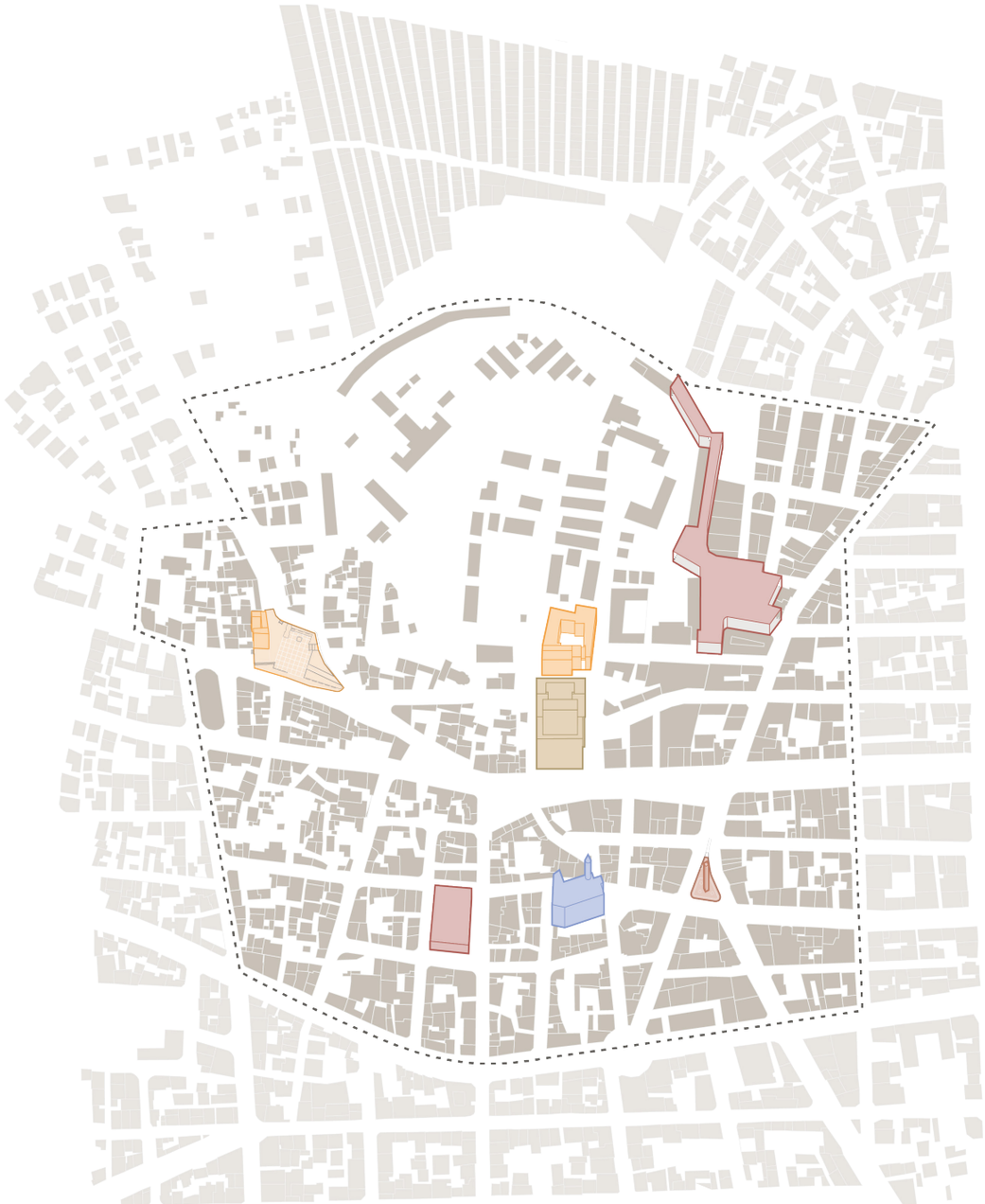


Figure 32: Landmarks in the inner core

Landmarks

"Once a history, a sign, or a meaning attaches to an object, its value as a landmark rises."

- Image of the City (1960, p. 81)

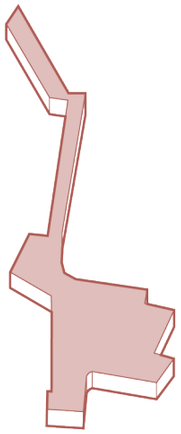
Lynch defines landmarks in a city as points of reference (1960, p. 78). They are physical elements in the city, which users can recognise and use for direction, structure, and identity (Lynch, 1960, p. 48). The landmarks identified in this section are thus ones that I derive from my own observations, as well as interview conversations.

Nabulsi House and Fouara Plaza

The Nabulsi House is a 1920s residential building of the courtyard typology. The plaza it faces was built in 2014, and now serves as one of the few public spaces in the inner core. The Nabulsi house is now a 'museum of residential heritage' on the ground floor, while the first floor offers space for a community development project where local women produce traditional crafts for sale (Fakhoury and Haddad, 2017, p. 202). Neither of the fore-mentioned uses were in practice when I visited.

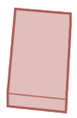
Saraya Museum

Constructed in 1885, Saraya museum was originally an Ottoman built caravanserais which housed pilgrims. It is made of local basalt stone chambers that engulf a central courtyard. It is now the Museum of Antiquities of Irbid.



Baleh
(Second hand clothing market)

An informal market that is housed in between buildings and wraps around the Tal, opening up to the north eastern back of the Tal. It is not a building, but rather a shaded space that covers the market. It is frequented by locals and villagers alike, and was a well known site in the inner core.

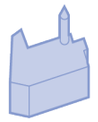


Hisbeh
(Fruit & Vegetable central market)

The Hisbeh market is now a concrete construction which sits in the centre of what used to be the main square of the town of Irbid. It is a one storey building which is partially recessed in the ground. The construction is of bad condition, the interior dark and cluttered. Nonetheless, it houses many of the fruit and vegetable vendors. The area around it is also known to be the marketplace and is heavily frequented.

Municipality Building

The municipality building claims its position in the centre of the inner core. The humble older building was demolished in 1986 to be replaced with the heavy building that faces the south of the city.

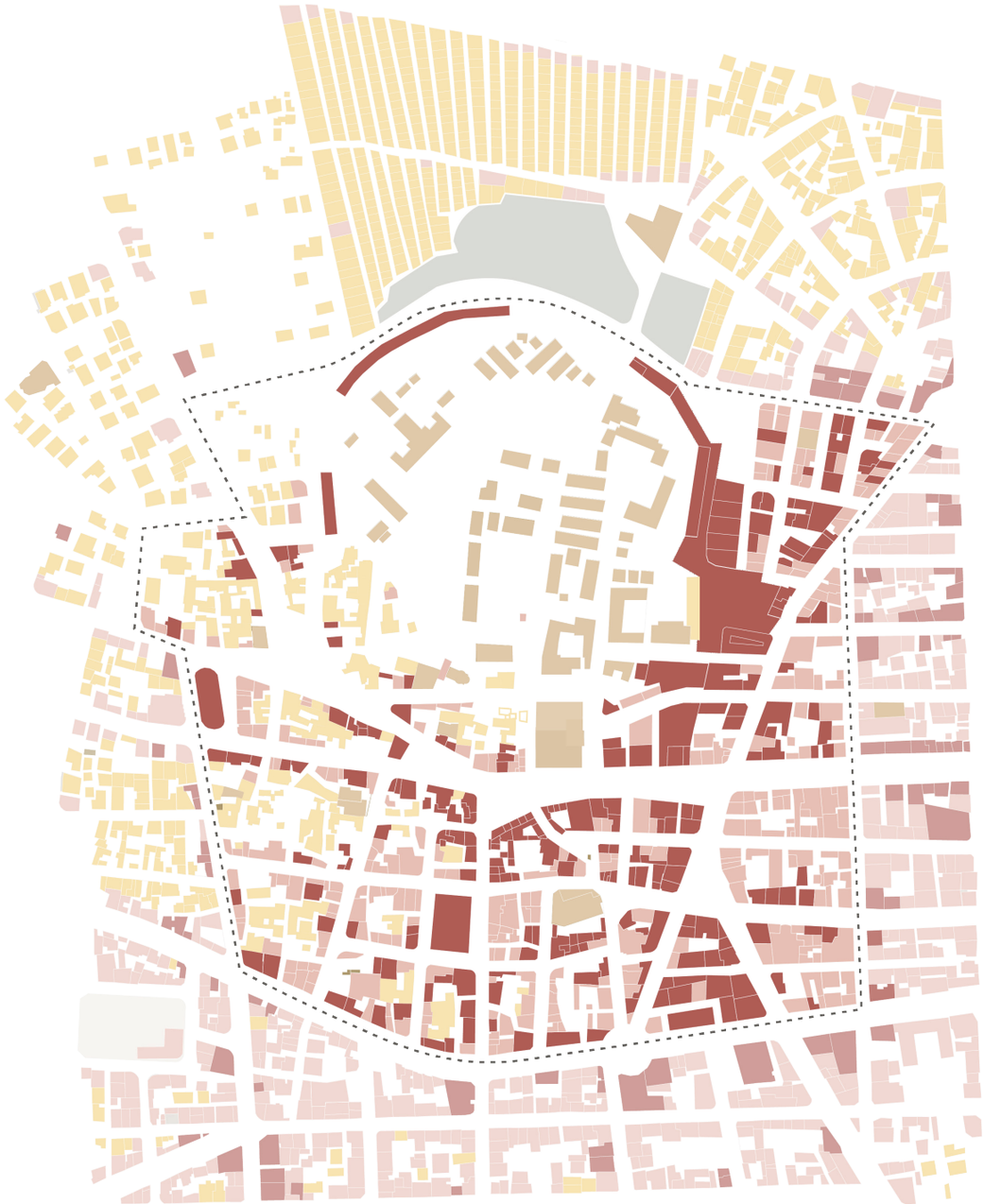


Central Mosque

The Central Mosque of the city, is in its traditional location at the centre of the town since the beginning of the twentieth century. Around it now is the flourishing fruit and vegetable market with all its informal vendors and shoppers from around the city.

Clock Tower Square

The clock tower marks the entrance to the inner core of the city. It has a Damascene inspired style, and it stems up from a similarly styled, enclosed garden on a traffic island.



Building Uses

The inner core is known as the ‘souk’ area, meaning the marketplace. It is identified as the marketplace destination and is known or visited for little else.

The high number of commercial program within the inner core is evident.
It is mostly made up of different kinds of shops, some offices, and residences mainly towards the west. The percentage of commercial only buildings in the inner core is 41%, while mixed use building (residential and commercial) count at 19%, and residential buildings 17% (Abu Jaber, 2009, cited in Fakhoury and Haddad, 2017, p. 203).

Figure 33: View of a commercial pedestrian street

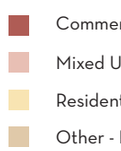
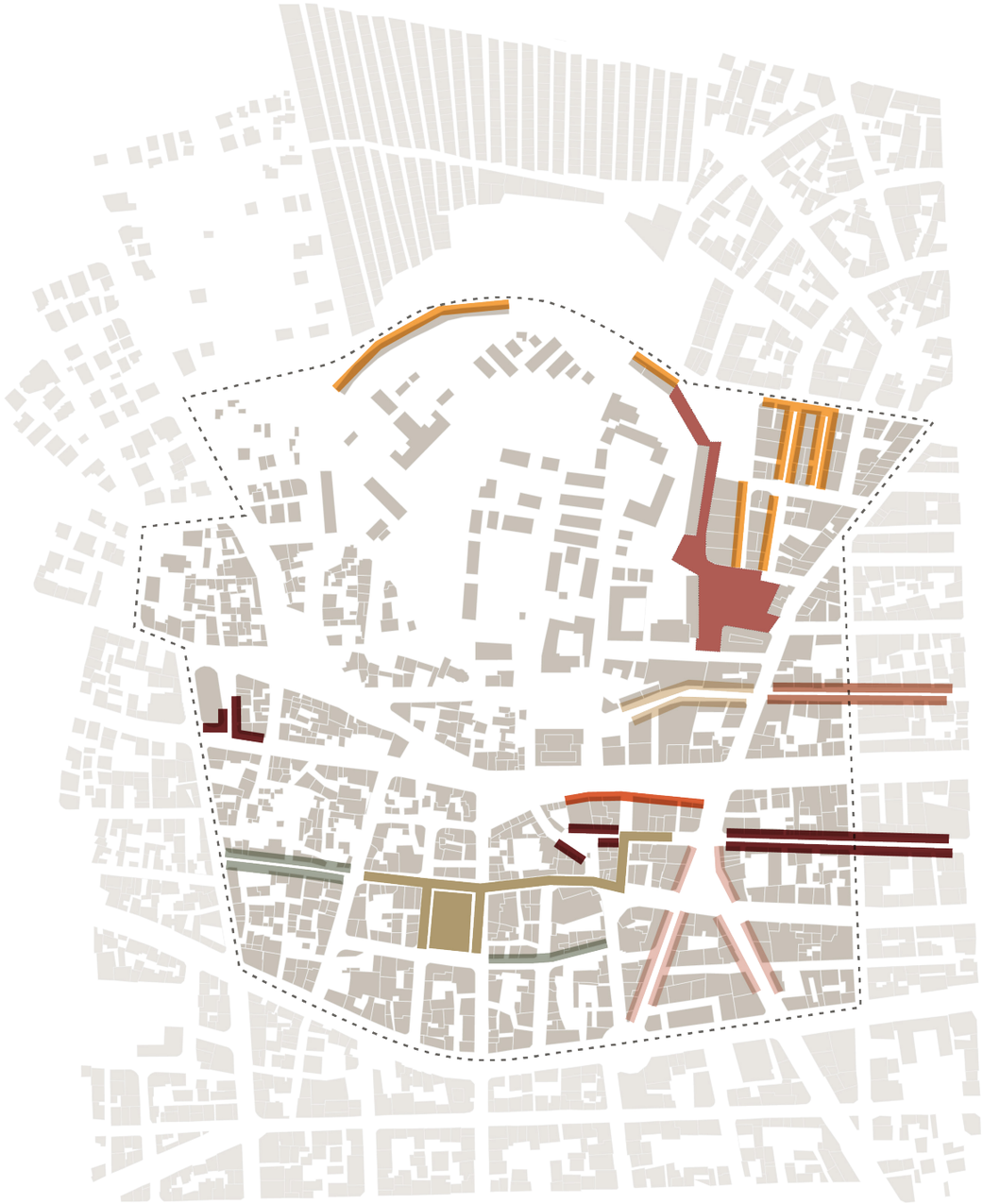


Figure 34: Building Uses



Markets

The main destinations in the inner core are the different markets it comprises. They have been developing as the city grows and now form a diverse range of commercial activity that is a major attraction point in the city. The markets are either in the form of shops housed in buildings, stalls under canopies (ex. Second hand market), or as informal carts with their vendors under the shade of umbrellas.

For these markets, people from around the city and the villages visit the inner core. In addition to the markets, some buildings also house different services, clinics and offices. The markets and services activate the city during the days, where the usual opening times are 10-8pm. Because of the dense presence of these activities, the inner core is often clogged with the different vendors, shoppers, cars and merchandise.

- Crafts: Metal and Woodwork
- Second-hand Market
- Lower-end clothing & Informal vendors
- Fabrics Market
- Perfumeries
- Upper-end clothing and Gold markets
- Take away Restaurants & Food
- Fruit & Vegetables market and Vendors
- Poultry and Meat Markets

Figure 35: Markets in the inner core

Green, Open & Public Space

The inner core contains different types of open spaces. There are a few dedicated spots for public plazas. Few of them, however, are equipped to function as public squares that people can enjoy. In addition to that, there are presently no bigger gardens or areas of green space. The cemetery to the north is relatively green, but it is closed off with a fence, and leisure use is culturally not acceptable. As for the inner courts of building blocks, they are mostly empty plots that are often used for parking.

Parking presents an issue in the inner core. Due to the heavy reliance on private cars, most street widths are reserved for them, as well as the many empty plots around the area. The plots are often privately owned lands that are rented out for parking.

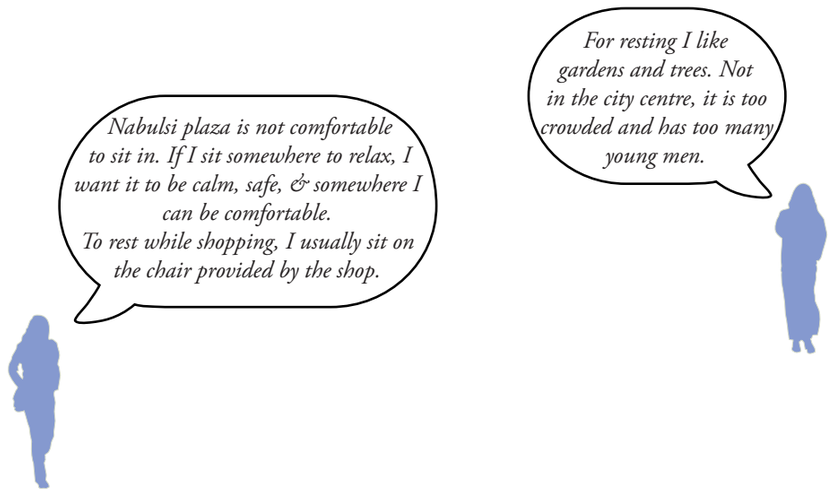


Figure 36: Open spaces in the inner core

Figure 37: Fouara Plaza

Figure 38: Main Stairs

Figure 39: Clock Square

Figure 40: Hashimi Plaza

Figure 41: Gold Market Plaza

Figure 42: Mosque Square

Public Space

For an analysis of the public spaces in the inner core I used Jan Gehl's Twelve Quality Criteria for Public Space. It is a tool that Gehl Architects provide for the assessment of public space, grouped into three major criteria of Protection, Comfort and Enjoyment.

I spent time in these spaces during the day and when the area is active. I observed the users in the area and accordingly assessed the spaces according to the criteria. Nonetheless, the assessment remains subjective and represents my impressions and observations. In addition, it is important to note that the perspective of women and men would differ in this survey particularly in regard to questions of protection from others, sitting and lingering.

The results of the survey are presented in the table below:

	PUBLIC SPACE						
	Figure Number	**37**	**38**	**39**	**40**	**41**	**42**
CRITERIA	**Protection**						
	Protection against traffic and accidents	☺	☺	😐	☹	☺	😐
	Protection against harm by others	😐	😐	☺	☺	☹	☺
	Protection against unpleasant sensory experience	☺	☺	☺	😐	😐	☺
	Comfort						
	Options for mobility/accessibility	☺	😐	😐	😐	☺	☺
	Options to stand and linger	☺	☺	☺	😐	😐	☺
	Options for sitting	☺	☺	😐	☹	☹	☺
	Options for seeing	☺	☺	☺	☹	☹	😐
	Options for talking/listening/hearing	☺	☺	😐	☹	☹	😐
	Options for play, exercise, and activities	☺	😐	☹	☹	☹	☹
	Enjoyment						
	Scale	☺	☺	☺	😐	☺	☺
	Opportunities to enjoy the positive aspects of climate	😐	😐	😐	☹	☹	😐
	Experience of aesthetic qualities and positive sensory experiences	☺	😐	☺	☹	☹	😐

Figure 43: Open Public Space

Street Hierarchy - Typology

The fabric of the inner core is old and was made before the heavy use of private cars. The narrow streets are therefore overly stressed with different kind of traffic, of which are cars, buses, people, vendors, and merchandise spilling from shops.

Figure 44 represents an analysis of the street hierarchy in the study area. It lead to grouping the streets in terms of width and observed use.

Figure 45: View of alleyway

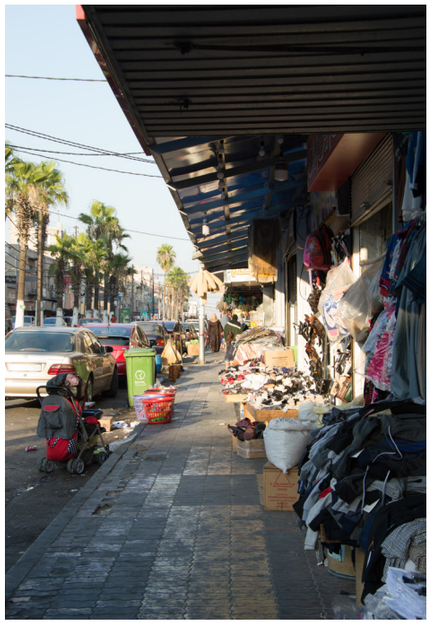


Figure 46: View of Main road: Hashimi street

- Main Road
- Primary Street
- Secondary Streets
- Pedestrian Street
- Lanes & Alleyways
- Plazas
- Bus Stations
- Taxi Pick-up

Figure 44: Street network hierarchy

Inner City Districts

This section presents stage three of the analysis. It is a qualitative display of the districts in the inner core. They are grouped according to my own observations of the different uses, identities and atmosphere of the inner areas.

The following pages will present the areas separately. The analysis aims to present the sense of place in the different areas, and offers a deeper understanding of place that helps build up the design section afterwards.

Figure 48: View around the central mosque area

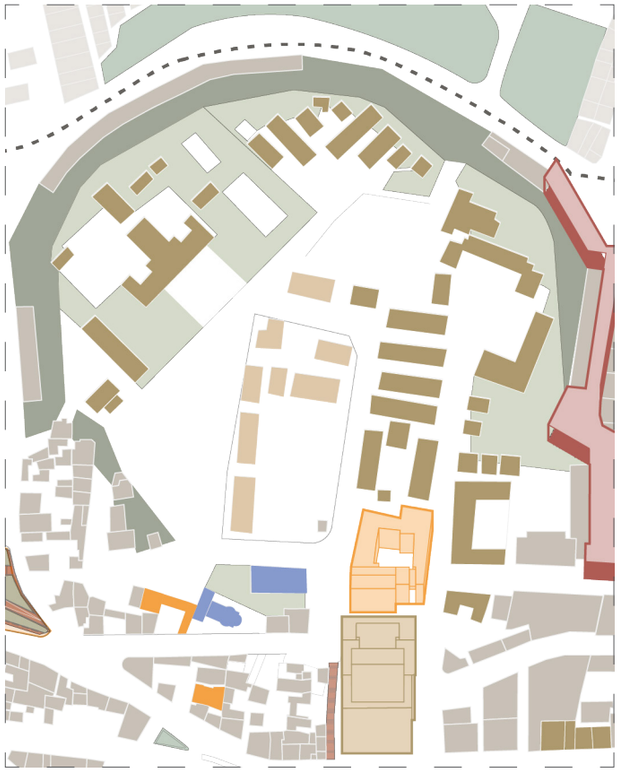
- 'Tal' Area
- 'Sha'bi' Lower-end Shopping Area
- 'Cinema Street': Upper-end Shopping Area
- South Entrance Area
- Central Mosque & Market Area
- Old Residential Neighbourhood

Figure 47: Inner city districts

Figure 49: View towards Saraya Museum on the Tal

a. Tal area

The Tal, or hill, main topographical landmark in the city, contains historic public buildings, and the most green space in the inner core. Most building materials are of basalt stone.



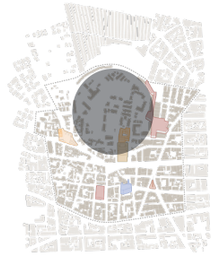


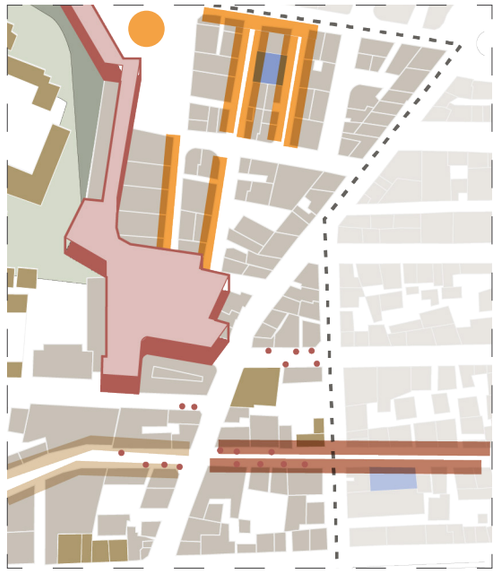
Figure 50: Tal Area Plan

Figure 51: Typical Street Facade

Figure 52: View from Boukhariyeh market street showing informal vendors, cars and pedestrians using the streets

b. 'Shaabi' - Lower-end Shopping Area

The 'Shaabi' (lower end) area is recognisable with all the informal vendors between the shops, and the generally narrower streets. Most buildings here are commercial with almost no residents.



Building Heights
1-2 Stories

- Bus Station
- Second-hand Market
- Lower-end clothing
- Informal vendors
- Crafts: Metal and Woodwork
- Fabrics Market
- Schools
- Mosques

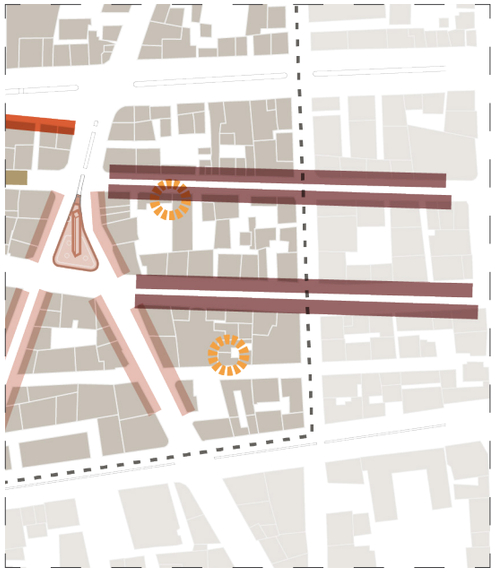
Figure 53: Lower-end shopping area

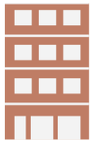
Figure 54: Typical Street Facade

Figure 55: View from Cinema street (officially Wasfi al Tal street) towards central mosque

c. 'Cinema Street' - Upper-end Area

The Cinema street, commonly called so after the, now demolished, cinemas that resided there. The area is home to relatively more expensive clothes shops, therefore little informal vendors sell here. It is mainly mixed use with some upper floor offices and residents.





Building Heights
2-4 Stories

Upper-end clothing and Gold markets

Take away Restaurants & Food

Perfumeries

Old Demolished Cinemas

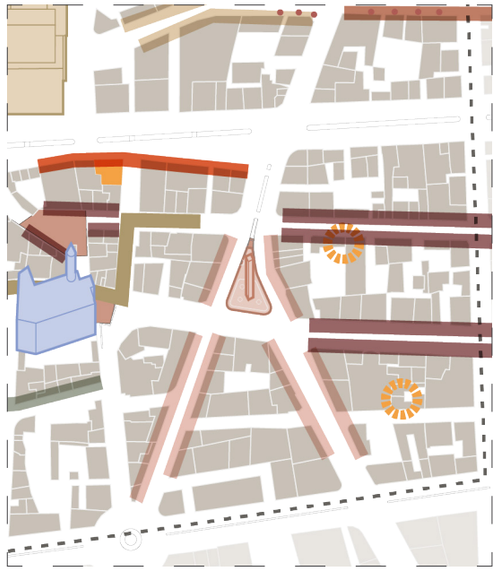
Figure 56: Higher end shopping area plan

Figure 57: Typical Street Facade

Figure 58: View from Al-Kamal Cafe

d. Entrance area

The entrance area borders both Hashimi and Palestine main streets. The clock tower marks the entrance to the inner core from the south of the city. The area is home to mainly commercial buildings. Most ground floor commerce is food and some take away restaurants that are open until late. Its central location, and uses make it active during the days and evenings.



Building Heights
2-3 Stories

- Take away Restaurants & Food
- Fruit & Vegetables market and Vendors
- Upper-end clothing and Gold markets
- Perfumeries
- Mosques
- Old Demolished Cinemas

Figure 59: Entrance area plan

Figure 60: Typical Street Facade

Figure 61: Collage of central mosque and the market around

e. Central Mosque, Fruit & Vegetable Market

The busiest area in the inner core is around the Central Mosque and the Hisbeh marketplace. The area is dotted with colourful umbrellas shading all the fresh fruits, vegetables, and their vendors. The area is also characterized by its paved floor instead of asphalt.

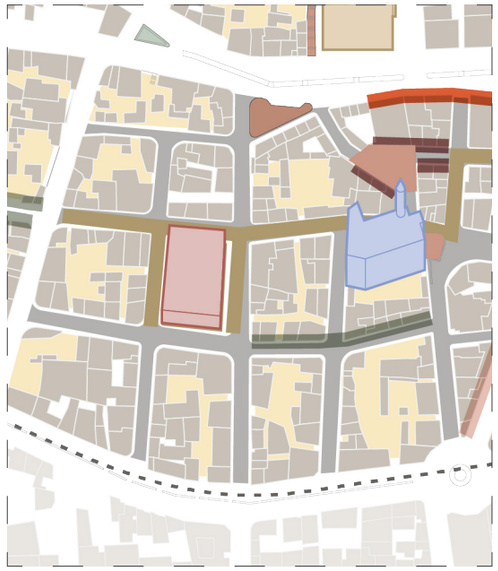


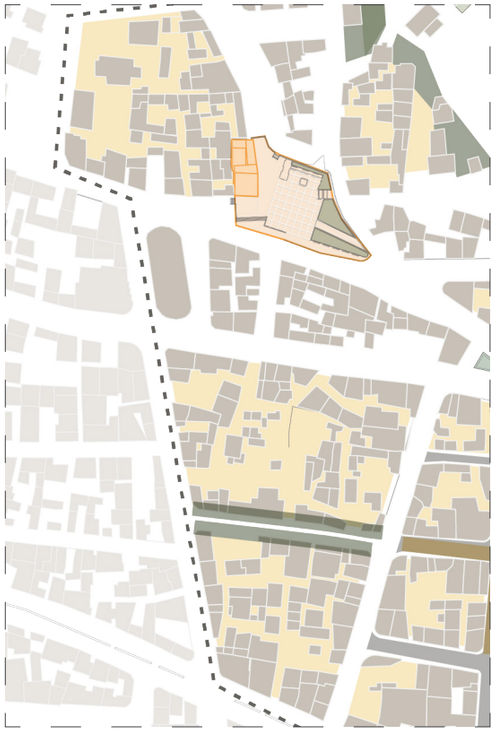
Figure 62: Entrance area plan

Figure 63: Typical Street Facade

Figure 64: View in the courtyard of Nabulsi House

f. Old Residential area

What used to be the Western Hara when Irbid was but a town, still remains a mainly residential area with its calm, aged stone buildings. Commercial areas divide it along the traffic island on Hashimi street.



Building Heights
2-3 Stories

Figure 65: Entrance area plan

Figure 66: Typical Street Facade

Interview Questions

Name
Age
Gender
Time living in centre
Home Location
Occupation

1. How often do you visit the inner core/use any services there?
2. What kind of things do you come for/services do you use?
3. How long do you usually spend there?
4. What do you think of the following categories:

    Types of shops
    Diversity of functions
    Diversity of people (age and gender)
    Accessibility
    Safety
    Transport to and from
    Transport within
    Pedestrian access
    Seating/Resting locations
    Mix of new and old buildings
    Building Heights
    Area suitability for housing

5. What do you think of the historic buildings in the inner core?
6. What do you think represents the identity of Irbid the most? (If a picture were to be advertised, what would it be of?)
7. If you can change something, what would it be?
8. What is your favourite place/spot in the inner core?

Local Impressions

An important part of the fieldwork was to hold interviews with the locals, in order to get a better sense of the place, their impressions, and apparent needs of the different users. Most of the interviews were held within the study area, and during my excursions there. They were semi-structured interviews where I had prepared a set of questions that I asked, and generally conversations went in different directions with some people elaborating more on certain topics than others. The questions were generally geared towards people's perceptions of the place, and the discussions revolved around their trends of use of the area, their perception of safety, the issues they face, the image it presents to them, and their general satisfaction. The conversations were in Arabic, and because of their semi-structured nature, it was difficult to include an accurate transcription of them. In this section I present an overview of the process and the main findings.

I tried as much as possible to talk to a diverse range of people. The people I interviewed ranged from shoppers and walkers by, shop owners, informal vendors, and one municipality worker. In regard to the local culture on gender, a lot more freedom is given to the males in the public realm than to females. There was a much higher presence of men than women, and usually women or girls were either in pairs or accompanied with a man. In general, males in that context are a lot more vocal, and offered their opinions more openly. In terms of use of the inner core, it appeared to be more common that men are shop owners and informal vendors, whereas women were usually the shoppers. Being aware of the fact than females were not necessarily always represented, I was more alert to the presence of lone women and, when possible, I approached them for interviews.

Number of people interviewed: 13

Gender:	Women:	8
	Men:	5
Age:	Under 18:	1
	18-30:	4
	30-55:	8

The interviews showed that there was a large footfall on the inner core during the day, when all the shops are open, the informal vendors are selling, and place is bustling with people from the city and the surrounding villages. This is, however, a stark contrast to the area at night, when the shops are all closed and most people go to their homes in the surroundings of the inner core, back to the villages, or venture elsewhere in the city to spend their evenings.

The services the inner core provides are enough that it attracts a large number of people, but at the same time not diverse enough to attract them at different times of the day. Simultaneously, there is a limited array of restaurants and cafés, with the ones present more suited for male users. Most shop workers, informal vendors, and service providers would normally get take away food. Furthermore, there are very few seating and resting locations open to the public. The few public spaces available are mostly also occupied by male users, while women generally expressed discomfort in using the public spaces in the centre. As for evening activities, most people expressed the desire to go to areas where they can spend time as a family, either to mixed gender cafés which are usually closer to the university area, or to gardens even further out. Some mentioned Fouara Plaza as suitable for families in the evenings. Consequently, this affects the perception of safety of the area, especially for women. Most women and men interviewed expressed feeling safe during the day, due to the presence of many people and the familiarity of the community. Contrarily, the area is void of people in the evening and was considered unsafe, especially for women who would avoid walking there after dark.

As for accessibility, the area is considered to be well connected. Many villagers arrived with public buses, while people who lived around the area chose to walk. Walking was also preferred within the inner core, as amenities were all close by. On the other hand, there is a lot of nuisance cause by car traffic and unorganised bus routes. The buses would agglomerate in narrow streets, waiting for people to board, therefore causing further car and pedestrian traffic. Despite the fact that there was a large presence of pedestrians, the streets and pavements are far from accommodating. Cars dominate the streets, and take priority over pedestrians most times. Furthermore, the pavements are often too narrow, with the shop edges overflowing, it leaves pedestrians with too narrow a space for walking. In addition to that, on hot days there is little shade to offer comfort for pedestrians or those who wish to stop for a rest.

The impressions I got from the interviewees was a general sense of belonging and pride for the city and its people. For many, the inner core was considered a place of heritage with its old markets, and buildings. Many also expressed liking the different shop and service signage, which made them feel like they've entered the marketplace. Subsequently, the interviewees mostly expressed a desire for the place to improve. The main remarks centred around traffic congestion and pedestrian accessibility, mainly the need to better organise traffic, and possibly remove car access from the smaller market streets. In addition, women primarily commented on better equipping the area for their comfort, through the rearrangement of areas where big groups of men collect, such as around bus stops.

In conclusion, the interviews gave me a broader insight to the ways people use the inner core, their impressions, as well as need and possible challenges. Since I spent most of my time in the study area, I mainly interviewed people who use it regularly. Therefore, the impression is not necessarily representative of the wider range of residents of the city. Nevertheless, it gave me valuable insight that I continued to build on, in combination with my own observations and theoretical framework.

SWOT

The next step of the analysis is to process the information presented on the urban fabric through the lens of the theoretical framework. Drawing on (Davoudi, 2012(a); Davoudi et al., 2013), humans have the ability to predict potential stressors, and prepare for them. It follows, then, that 'preparedness' is a required quality for the transformation of socio-ecological systems. It entails identifying opportunities and vulnerabilities in the system in order to lead transformations to a desirable state.

Accordingly, the next section presents a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the inner core. It assesses the physical, social, economic, and cultural capitals that the inner core holds. All of which contribute to building the capacity giving assets of Place Attachment, Sense of Community, Economic Opportunity and Social Learning. These are essential components for building social resilience. The SWOT analysis is then used to derive the design guidelines in the next chapter.

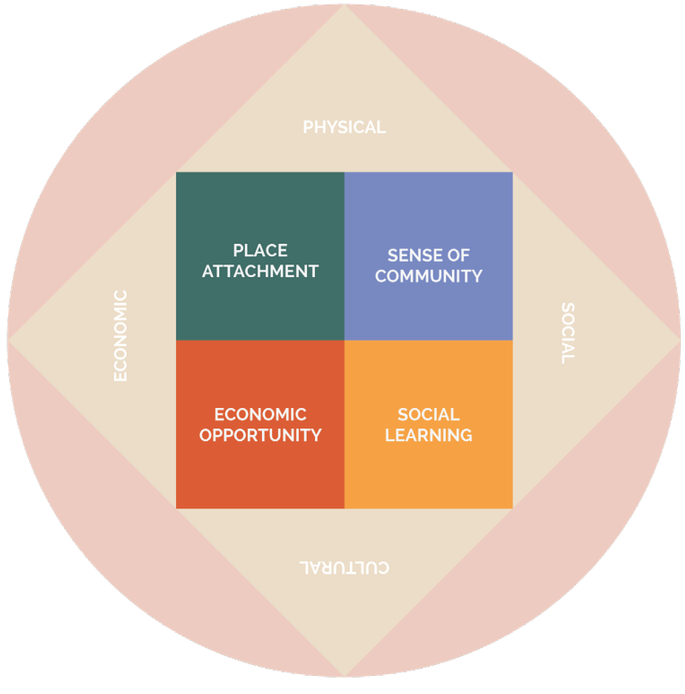


Figure 68: Capacity Giving Assets for Building Social Resilience

Figure 69: View of the Church and Mosque on the Tal

Strengths

Historic Fabric: The inner core has a strong identity as it embodies the growth of the city in its urban form. Along some of its narrow streets, it boasts a number of old stone buildings. They include private buildings, public facilities and buildings of cultural importance.

Figure 70: Historic buildings in the inner core

Strengths

Place Attachment: People interviewed showed a general affection to their city. There was a sense of pride, coupled with enthusiasm of pointing out the nice areas of the core. The old souk areas, and some of the old buildings were especially pointed out as heritage.

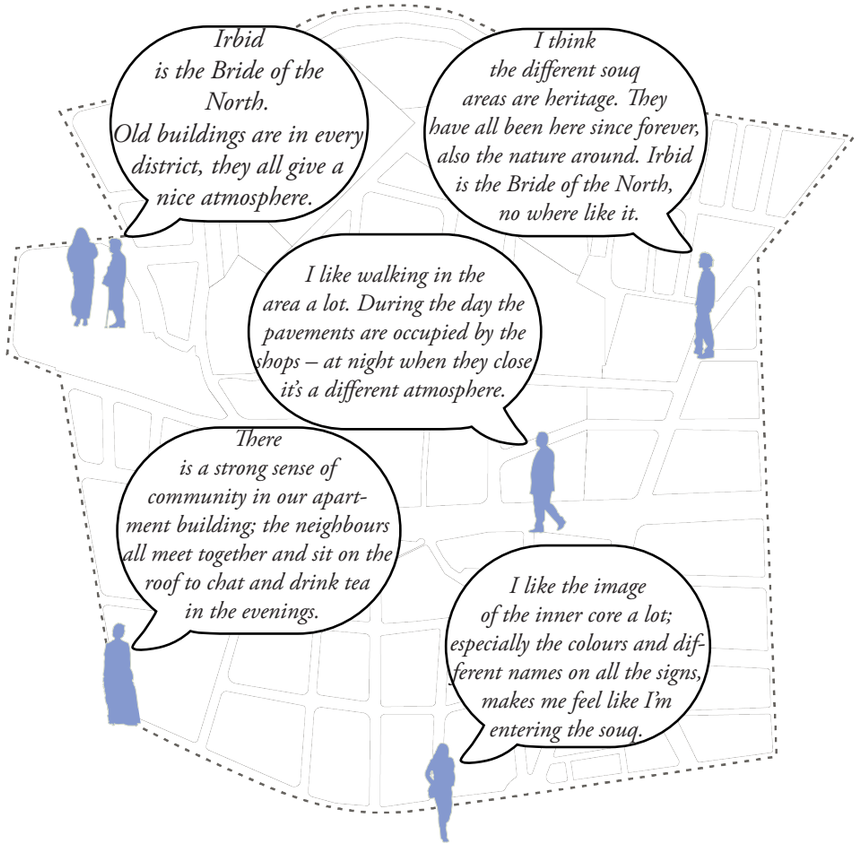


Figure 71: Interview quotes related to place attachment

Strengths

Diverse Population: The city of Irbid houses a diverse range of people including local of different socio-economic groups, students from around the country, as well as people of different religions and ethnicities.

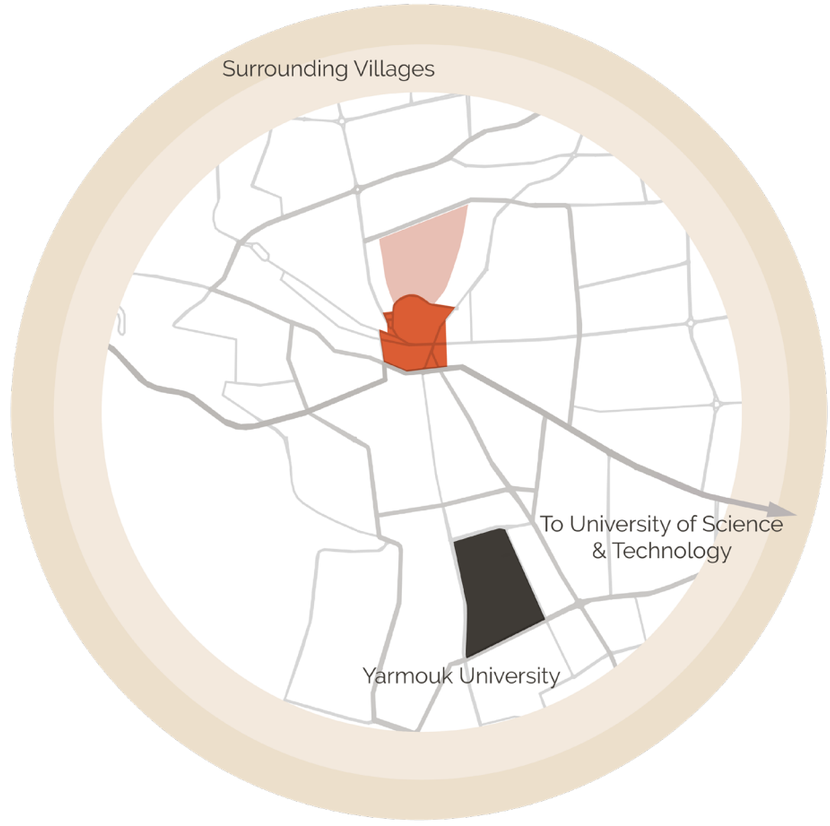


Figure 72: Map showing the diverse groups of people who reside in, or depend on the city

Strengths

Human Scale: Building in the inner core are generally low, ranging from 2-4 floors. The streets are also narrow, as the inner core developed before the arrival of cars to the city. This makes destinations within the inner core a walking distance away, therefore eases connectivity within.

Figure 73: Building Heights diagram. Distance from the centre is 300m, a 4 minute walk

Strengths

Multiple Functions: The centre is known for its marketplace (souq) area, and is therefore full of different shops, markets, trade, and services that are dispersed throughout.

Vibrant: The inner core is a destination for shopping and services for locals as well as villagers of surrounding areas, it is buzzing with people throughout the day.

Figure 74: Daytime active ground floor fronts

Strengths

Diverse Economy: The inner core has a range of shops and business ranging from informal vendors, markets, cheap merchandise as well as higher end shops, therefore also servicing different socio-economic groups.

Figure 75: Diverse economy spots

Strengths

Diverse Knowledge: There are several schools in the centre, that have formed part of the urban fabric from the start. There are also a few cultural buildings and museums. In addition to that, there are various know-hows of crafts and trade, a vocational school, as well as various business and trade connections.

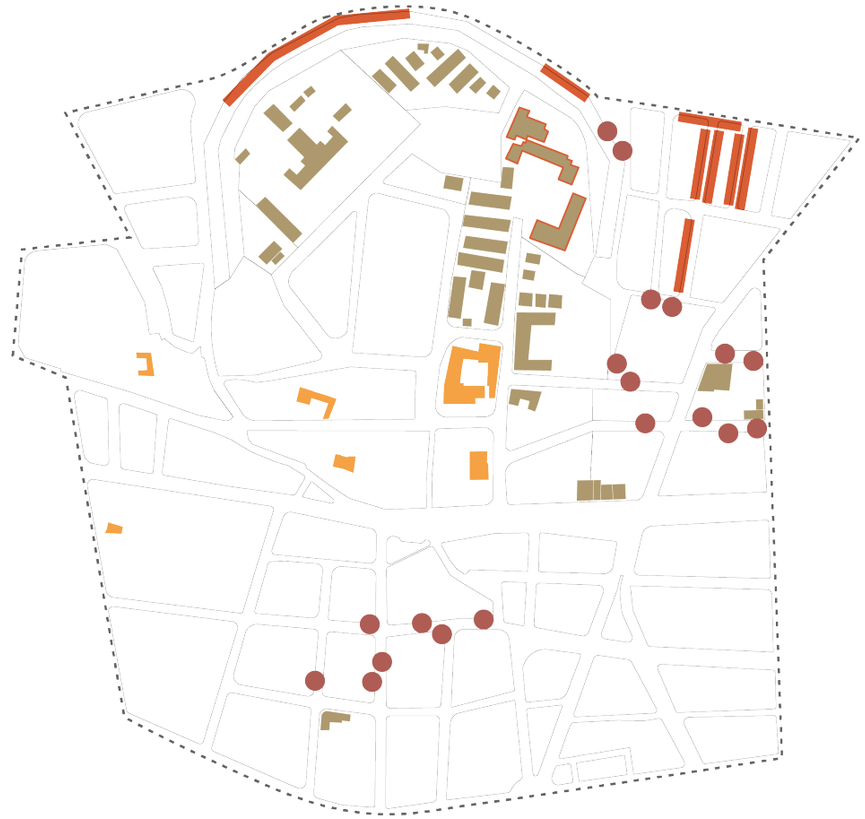


Figure 76: Diverse knowledge in the area, and education facilities

Figure 77: View of Boukhariyeh Market Street in the lower-end shopping area

Weaknesses

Few Resting Spots: The inner core is a hectic place with many people passing by, getting their shopping done, coming for a day trip from the villages. There is nowhere for people to rest. There is a clear lack of public space with supporting amenities, as well as spots to rest and simply sit on a bench in the shade. There are no gender mixed cafes either, the only ones present are cafes frequented by men only. There is also a lack of restaurants, as most of the few food providers are take-aways.

Lack of Green Space: Parks, gardens and green spaces are extremely scarce, in the centre as well as in the city in general. This produces a crude urban fabric which lacks all the benefits that green space sustains.

High presence of cars and parking space: leaving little room for pedestrians, public space, and other amenities. It affects the quality of the space, the uses possible, hinders accessibility, and attracts less diversity of people.

Figure 78: Open space uses

Weaknesses

Weak Connectivity: The paths in the inner core are clogged with cars, buses, people, informal vendors, and displayed merchandise, with not enough designated space for any of the flows. Most space is given for cars. This hinders connectivity within the core and with other parts of the city.
Weak pedestrian-cyclist access: Pavements in the inner core are not adequate. They are usually too narrow, or blocked by displayed merchandise, or not properly paved, which leads people to walk on the streets. There are no cycle lanes, and with the heavy, hectic traffic, it poses a danger on the few persevering cyclists that were spotted.

Figure 79: Street Network

Weaknesses

Lack of social cohesion/Inclusivity: Women expressed feeling uncomfortable in the inner core. Males enjoy a lot more freedom in the inner core areas, boys, youth and men congregate in groups. In addition, it is difficult for the elderly to access the inner core, walking is not easy, streets and paths are busy with cars, and people.
Socio-spatial fragmentation: Middle class groups who resided in the inner core have moved to the south of the city. The 'modern' city continues to grow in the south with big streets for cars, shopping malls, cafes around the university, and other amenities. The inner core maintains its 'lower economic class' marketplace identity, creating a socio-spatial divide in the city where little mixing happens.

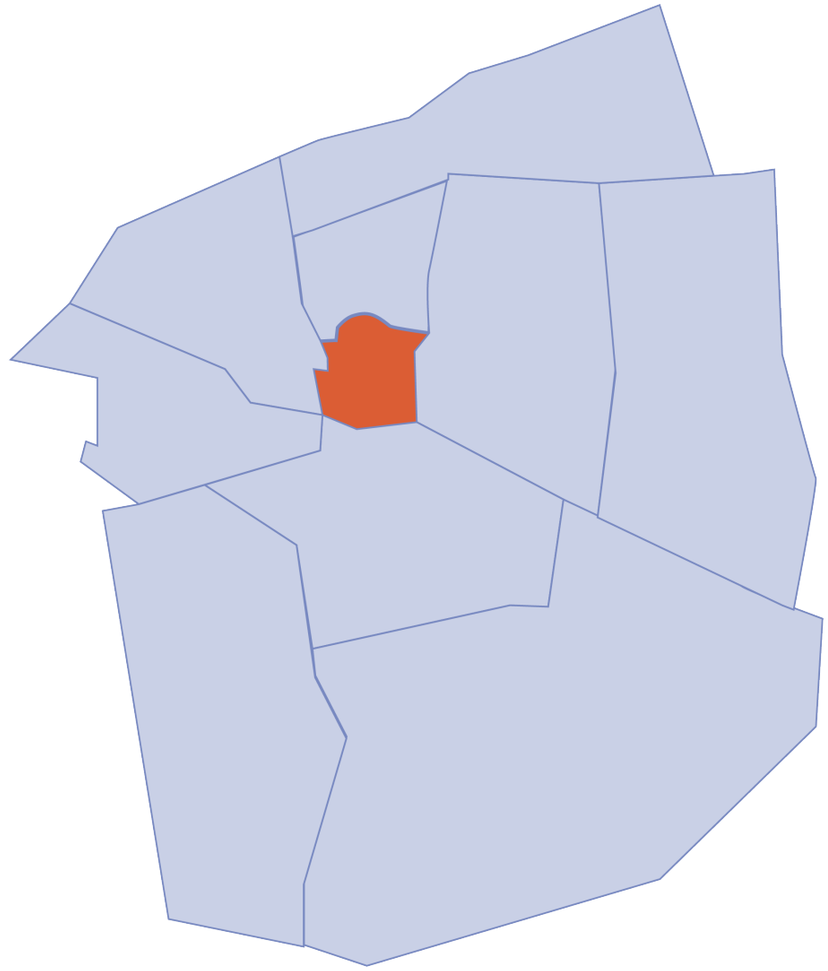


Figure 80: Map showing areas around the centre

Figure 81: Night-time view of a commercial street in the inner core

Weaknesses

Safety: Use of the area and presence of people in the streets is limited to shop opening times mainly. The inner core is considered safe during the day. However, in the evenings, at 8pm all the shops close, due to the small number of residents, as well as lack of amenities that make it a destination in the evening, the inner core is deserted and dark at night, and the perception of safety is very low, especially for women and children.

Figure 82: Night-time active ground floor fronts

Weaknesses

Homogeneous 'marketplace' identity: in both form and function. The inner core area as a whole is seen as a mainly market and shopping area, with some other services such as doctors or lawyers. As a destination, it is only visited for buying certain items, or a certain service. This makes it active during the day as a buzzing transit area of people running errands, and in contrast, completely vacant at night when the markets and offices are closed. There is no provision of varied community activities in the centre, for leisure, recreation or sports.

Figure 83: Building uses and markets in the inner core

Weaknesses

Cultural activities: There are some museums, mainly the heritage buildings. They are introverted in typology, and do not claim a big presence in the centre, the and the lack of accessibility and connectivity of the fabric makes them less recognisable. On an administrative level, they also do not function to their full potential, nor hold strong events that would bring the community together. The only other form of cultural activity were the two cinemas that are now demolished.
Knowledge Exchange Platforms: Only one library in the centre, as part of the bigger municipality building. There is a clear lack of any space that offers knowledge exchange, or training facilities. There are no community nor youth centres.

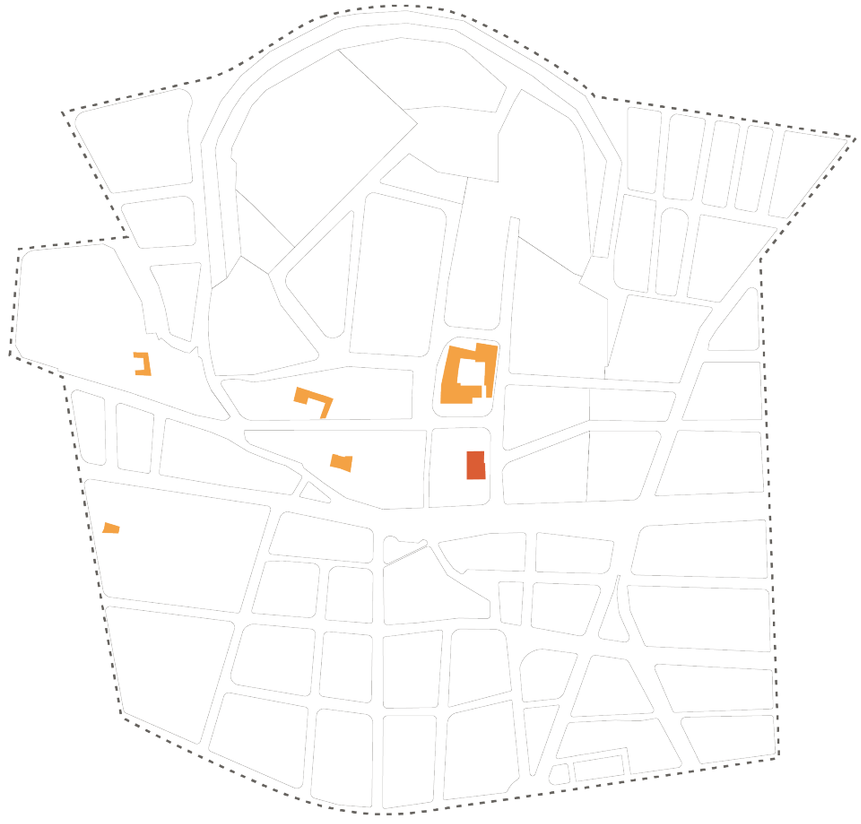


Figure 84: Culture and knowledge exchange in the inner core

Figure 85: Street in the inner core

Opportunities

The Inclusive City
A city that embraces its diverse population, and allows a place for all. A city that boasts an abundance of different types of public space, including various activities, that would allow for better social cohesion amongst different members of society. An increased sense of belonging could be fostered. The centre manifests the history of the development of the city, and can once again be a place of pride for all residents of Irbid.

The Accessible City
The old city fabric, and the proximity of the different functions gives the centre great potential to be a walkable place, dotted with different public spaces. Improved access and connectivity within the centre and with its surrounding districts. Allowing access and comfort for different types of users, and stimulating cohesion amongst them.

The Diverse City
The inner core can be a place of multi-functionality, where diverse happenings take place. A destination to visit at different time of the day and the evenings. Through the stacking of functions, the inner core can accommodate for a stable community of residents. Utilizing the history and identity of the inner core to appeal to people of different socio-economic groups, age, gender, as well as tourists, creating economic opportunity and diversity.

The Innovative City
The presence of different kinds of trade in the centre, as well as th historic fabric offers a great opportunity for knowledge exchange platforms, skill training, and innovation. There is potential for cultural diversity, including the adaptive reuse of old buildings, to include new programs that offer platforms for social learning and cultural activities for the residents. Moreover, with the strong presence of students in the city, there is huge potential for knowledge transfer, and development opportunity initiated by the students. Experimentation, new ideas, and progressive implementation of various know-hows.

Figure 86: View of Hashimi Street

Threats

The inner core faces various threats that are all interlinked, and cause a chain of effects. There are many potentials, as outlined in the strengths and opportunities, but the further the weaknesses develop, the larger the threat to the inner core's resilience, and that of its community. The inner core is the heart of Irbid, it holds its historic identity, and is the anchor that binds the surrounding areas together. It is also the place of livelihood for the community, the poor living environment will not sustain a society for long. In line with Berkes and Ross (2013, p. 11), the interdependence of socio-ecological systems entails that a healthy environment supports the wellbeing of society, and a healthy society is capable of maintaining its environment. Therefore, there is urgent need for the weaknesses presented to be addressed.

Decay of the Centre: There is a huge risk that the inner core of Irbid becomes untenable. It is already heavily stressed, with little space for the different flows, or places that are inclusive, and foster a sense of place. The lack of public and green spaces, coupled with the deteriorating historic fabric, and the increased use of private cars not only weakens people's connections to place, but also community connections. According to (Maclean et al., 2014), these are essential attributes for social resilience.

Further Socio-spatial Fragmentation: The greatening social divide already exists, with the centre being associated with people of lower socio-economic backgrounds, and the city expanding further to the south with the student and middle class communities. Within the inner core, there is also already a lack of connectivity, and accessibility, particularly experienced by women. The polarization of social classes, and social fragmentation creates less cohesion and weakens social capital, which is essential for social resilience.

Loss of Economic Livelihood: As the urban fabric deteriorates, with the inner core maintaining its homogeneous identity as a marketplace, it will cater for a decreasing diversity of people. Not only will this affect the economic livelihood of the community that depends on it, but it will also impact the safety, and usability of the area. A diverse and innovative economy sustains the community and enables society to cope with change (Maclean et al., 2014). The current state of the inner core depends on the one function of the marketplace, and mainly on one socio-economic group, which greatly weakens resilience.

Reduced Opportunity for Development: The lack of spaces and platforms for circulating knowledge and skill on a community level hinders the ability for social learning and applying the knowledge to work out local issues. In turn, this also affects society's 'preparedness' for stressors, thereby affecting their resilience (Davoudi (2012(a), Davoudi et al., 2013).

Part III:

Urban Design

In this chapter the theory and analysis chapters are incorporated to form an urban design proposal for the inner core of Irbid. The proposal aims to strengthen social resilience capacities through the urban environment. Firstly, I present the overall design plan. Subsequently, I explain the design layers that form it, in line with the theoretical framework.

Theory to Practice

The design chapter is where the theoretical framework and the local knowledge of the site are merged. The urban design strategies for the inner core of Irbid are mainly guided by the urban tools proposed in the theoretical framework, as well as the information derived from the SWOT analysis. The aim of the design proposal is to strengthen the capacity giving assets that are related to the urban environment. The design is first presented as a coherent whole, as all the assets are intertwined, then the design layers are peeled off to clearly explain the different components.

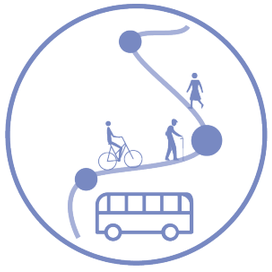
An understanding of place, facilitated by the fieldwork, as well as the SWOT analysis defined the existing anchors to preserve and strengthen as well as the needs that guide the design. The following section translates the urban tools into practical local interventions, according to the identified needs.

Figure 87: Urban Tools for Socially Resilient Urbanism

Design Direction

Inclusive Public Realm

Regeneration of existing open space: Enforcing spaces with diverse programs/functions that would attract a diverse range of people and at different times of the day which would help to ensure safety.
Public Space: Adding more spaces that could be managed as public space, including different kinds of seating that do not require any purchases, and that are inclusive of all people, including women and the elderly.
Green Space: Including greenery, shade, resting spots that add bio diversity, cater for different users, and induce better urban environments.
Playgrounds: for children and sports activities for youth, creating a diverse program that include different users in the inner core.
Pedestrian friendly Streets: Enforcing streets with benches, pedestrian zones, making them part of the city space, not only car transit zones. In addition, including space for informal vendors, as they are an integral part of society.



Connectivity and Accessibility

Pedestrian access: Pavements, pedestrian streets and regulating traffic to allow better pedestrian access in the centre.
Cycle routes: Including cycle routes in the plan that connect the centre internally and to the surrounding neighbourhoods.
Bus Stops and routes: Redirecting bus routes to more convenient locations that reduce clogging the centre, and ensuring good connectivity with the rest of the city.
Parking houses: Adding parking houses, reducing parking on the streets, and improving multi-layered connectivity of different traffic options.
Connectivity: between different functions; public spaces, historic buildings, and markets.

Diverse Functionality

Mixed-use Buildings: The stacking of different functions, which ensure a diversity of people, and different times of use. In addition to preserving existing open spaces for public and green functions.
Residential neighbourhoods: Increasing residential capacity in the inner core, which provides a fixed community of people who live there, care for the place, and increase diversity of uses.
Cafes and restaurants: Complementing the markets with a variety of cafes and restaurants that are also open later in the evenings, when the markets close, making the centre also an evening destination. In addition to activating public spaces.
Community Activities: Recreation, Sports Fields which would also make the inner core attractive for different uses.
Markets: Maintaining and facilitating the use of existing markets, to ensure economic livelihood, and diverse economic opportunity.

Knowledge Exchange and Skill Training

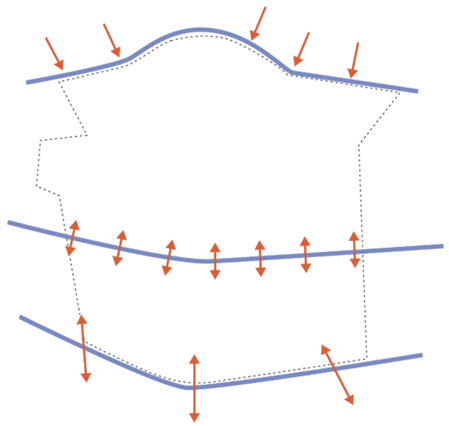
University Complex: Extending the connection to Yarmouk University, by adding a university complex in the centre, attracting students to access the area, for social mixing, and knowledge exchange.
Public Library: for the different members of the community, and an open space for the community to convene and use.
Youth Centre: Youth training centre, directing youth energy to learning, being productive, achievement, skill training.
Arts & Crafts training: Keeping the craft heritage alive by passing the knowledge to the new generations, through training centres and selling markets.
Community Centre: where women and different parts of the community can meet, partake in community activities, and aid in participation of urban governance. In addition to providing an open space where different members of the community can convene, work, connect and exchange knowledge.
Historic Fabric & Cultural Activity: Ensuring the adaptive reuse of the historic buildings. Strengthening the cultural programs in the existing museums, as well as the connectivity between them. Reviving the demolished cinema, which can act as a culture centre for theatre, cinema, and other cultural program.

Inner Core Urban Plan

Inner Core Urban Plan

The following section presents the proposed design plan for the site. It's main driving forces being the urban fabric and SWOT analysis. It is presented firstly as an over all plan, with the main strategies that formed it, and then described in layers according to the conceptual framework.

Rerouting Main Traffic
The first strategy was to free the centre from traffic. Thus, moving the bus station at Fouara plaza to the north-western corner of the site. Consequently, this creates a centre with clear entry points, at which buses connect it with the surrounding areas and villages. In addition to the bus stations, parking houses are proposed, so that main traffic would go around the centre rather than through, with only essential trips within.



Activating the Edges
One of the main strategies for the design was how to bridge the different edges, making them porous borders instead of boundaries. To the northern border, Al-Khuloud Street, the strategy was opening it up to the north by removing the solid wall lining the cemetery, as well as adding activity around it. The central border, Hashimi Street, already had a lot of activity around it. The key was through better street design that is hospitable to pedestrians. As for the southern border, Palestine Street, it was a mixed strategy of both the above, as it is a main axis across the city.

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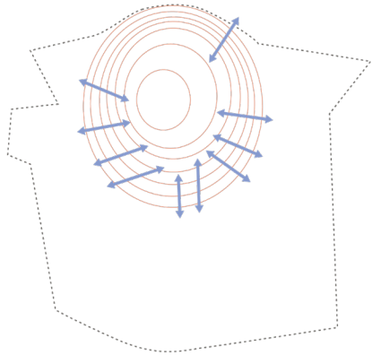
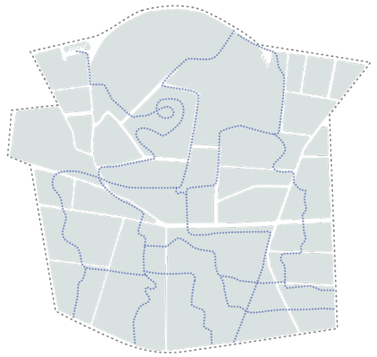
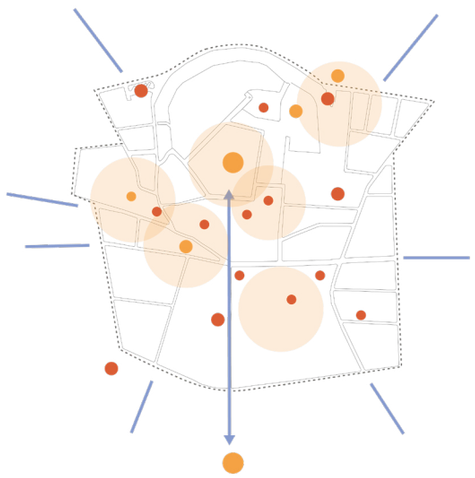
Figure 88: Proposed Plan for the Inner Core



Opening up the Tal
The Tal is the most prominent part of the city. With its topography, and the way the city expanded, it had clearly turned its back to the north of the city. This causes several problems, of isolating the area of the Tal, as well as the area behind it. This strategy opens up the Tal, adding several more entry points where possible, both pedestrian and vehicular to strengthen its connection to the city, as well as adding more inviting program in the Tal itself.



Regrouping Plots
The old fabric of the inner core, with its narrow streets, was made for pedestrian and carriage use. It is now overstressed with different kinds of traffic. This strategy aims to capitalise on space for pedestrian use. Through regrouping the plots, more pedestrian only and shared streets are proposed, which also strengthen connections between landmarks and public plazas.



Dotting Different Functions
This strategy aims to open up the centre to the rest of the city as a destination which is not only centred around shopping. In addition to increasing housing capacity, diverse functions are dotted around, which would attract different kinds of users, at different times of the day. In addition, one main strategy is to connect the historic core to the Yarmouk University by proposing a campus on the site of the municipality owned security centre on the Tal.

Design Layers

The following section peels the different layers making up the proposed urban design plan for the inner core. According to the conceptual framework, the four layers of Inclusive Public Realm, Connectivity and Accessibility, Diverse Functionality, and Knowledge Exchange and skill Training are presented.
The following is a simplified diagram which shows the specific interventions to the urban form that are proposed. A more detailed explanation of each layer, set in context with the existing assets are explained in the next pages.

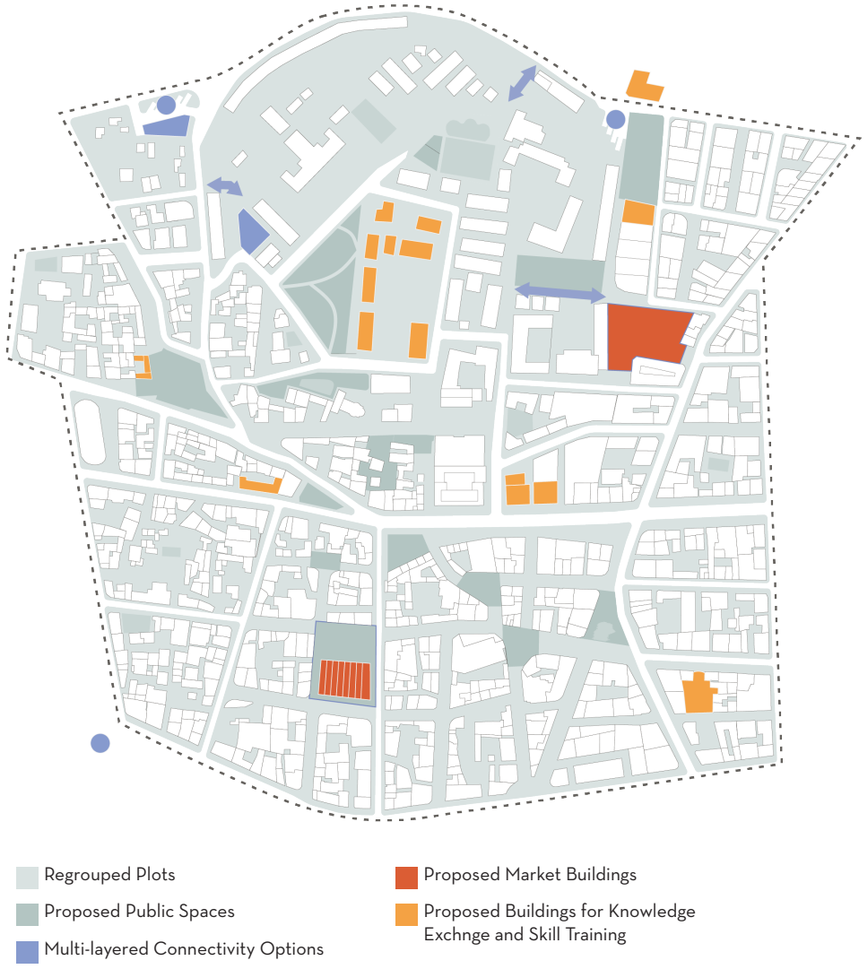


Figure 89: Culture and knowledge exchange in the inner core

Inclusive Public Realm

This layer encompasses the new public spaces created, of green space, plazas and playgrounds. In addition to that, a pedestrian network which strengthens the public sphere by connecting the main open spaces as well as the main landmarks.

1. A new plaza proposed towards the back end of the Tal, coupled with a multi-use sports field, and a new playground. They are at the heart of the school buildings, and the towards the new back access of the Tal. Their location aims to add program to the Tal area.

2. Crafts Square: A new public space proposed, reorganising the previous space by moving the bus station to the side of the square, and enforcing program around it which promotes crafts and skill building (see Figure 101 on page 159). The public space aims to add program tot he back side of the Tal, ad spark further functions.

3. Fouara Plaza: An existing public square. A reorganisation of the bus station that bordered it to the North is proposed (see Figure 93 on page 149). In addition, a renovation of the north-western corner of the square is proposed, where the current wall should be replaced with steps, to open the space further, ensuring safety and no blind spots.

4. AlMatal Plaza: A new public space proposed at the top of the existing staircase from the main Hashimi Street to the Tal. The square would boast views of the city, and would act as a connecting point for the urban fabric around it: Saraya museum, Beit Arar, the church, mosque and new university building (see Figure 98 on page 153).

5. A new proposed plaza and green space on Hashimi street, that would provide further green space in the city, more city space for informal vendors, as well as resting spots on the busy street.

Public Space/Plazas
Semi Public Inner Courts
Public Playgrounds
Public Green Space
Private Green Space

Figure 90: Proposed Open Public Spaces in the Inner Core

6. Neighbourhood square: An inner square is proposed, which forms a network with the smaller squares (6,7,8,10) in the more intricate fabric of the city. The current space is empty open space on a street. The pedestrianisation of the plot allows the space to be developed into a neighbourhood square which is already bordered with a shop, as well as a Bathhouse (see Figure 98 on page 153).

7. Hashimi Plaza: A renovation of the existing space is proposed, which combines the space with the commercial pedestrian street to its south (see Figure 33 on page 86). The renovation includes public seating, green space, as well as space for kiosks and vendors.

8. Gold Market Plaza: A renovation of the inner plaza, currently surrounded by the gold market as well as the fruit and vegetable vendors. The renovation includes adding trees for shade, as well as seating, as well as diversifying the functions around it by adding a cafe/restaurant.

9. Main Market Square: A new plaza and marketplace is proposed in the place of the old deteriorating concrete structure. This space used to be the main square of the town before Irbid grew to the city it is now. A revival of the town square is proposed, with green spaces, diverse seating areas, as well as space for the existing market functions and informal vendors (see Figure 99 on page 155).

10. Mosque Square: The pedestrianisation of the plot allows for the expansion of the square. The renovation also includes removing the walls that currently surround the square, marking it instead with different furniture.

11. Clock Square: An expansion of the existing Clock Square is possible as the traffic is rerouted, and the square is extended to the buildings. A new playground is proposed in the area, as well as more trees for shade, and different seating (see Figure 97 on page 151).

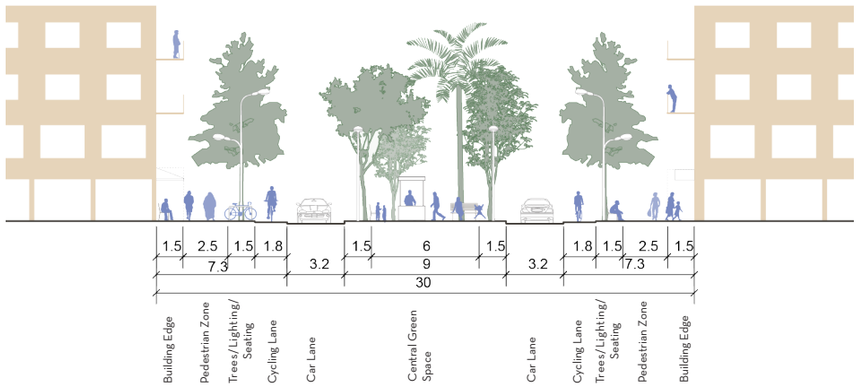


Figure 91: Section of Hashimi Street and central green space (Plaza number 5)

Figure 92: View from AlMatal Plaza

Connectivity and Accessibility

This layer contains the connectivity and design of the streetscape. The design better connects the inner core to other areas, as well as ensuring connectivity and accessibility within it. It would allow people, cars and merchandise to flow more smoothly, also making the place accessible for different people and allowing space for moments of pause within the stream.

The main approaches in this layer are the regrouping of plots, creating more pedestrian and cyclist friendly spaces, as well as the removal of traffic from the inner core spaces. The central roads circulating the inner core would host the bus routes as well as serve the main car traffic. Parking is not allowed on the main streets, but rather housed in parking houses, underground parking, and when necessary, parallel parking on secondary streets. Introducing multi-storey parking garages is vital to the success of the scheme, as they free up the spaces in the city currently used for on street parking. These parking houses can later develop into mobility hubs which also service future traffic such as electric bikes, car-sharing or e-scooters. Essential to their success is the development of a safe and accessible pedestrian network. The objective is that the parking houses coupled with the pedestrian network would allow for a one stop parking and then running errands on foot, instead of driving around through the inner core. Pedestrianisation could be implemented gradually, with shared streets first where pedestrians are prioritised, and car access is allowed in certain hours, for example, at night-time for commercial streets.

A workable traffic plan for the inner core is a highly demanding, complex task which requires the expertise of professionals on the topic. Nonetheless, the diagrams in this section propose a structured, conceptual approach to traffic planning in the inner core, prioritising space for pedestrians, cyclists, and green areas, all of which support economic activity, safe, accessible places, and connectivity.

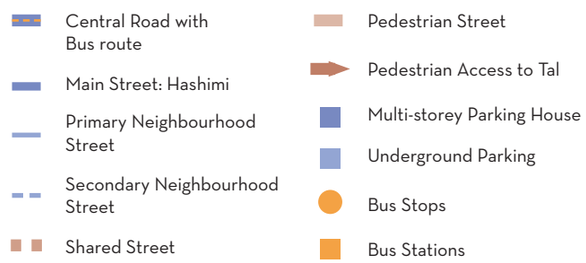


Figure 93: Proposed street hierarchy, typologies, parking spaces, and transport network

Figure 94: Central Road for main car traffic and bus routes. Ex.: Al-Khulood and Palestine Streets bordering the study area to the north and south.

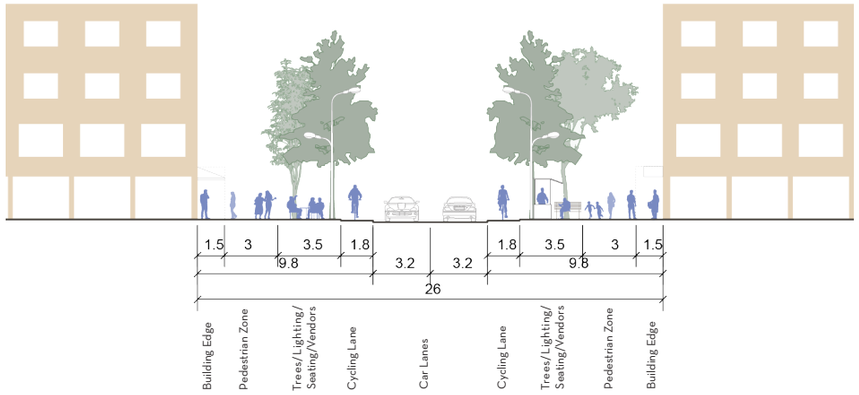


Figure 95: Main Street, Hashimi street section, allowing light car traffic, cyclist routes, and adequate spaces on the sides for shop fronts, pedestrians, trees and shaded benches, and vendors.

Figure 96: Primary neighbourhood street, ex.; Cinema Street. One way streets with dedicated cycle lanes, as well as parallel street parking.

Figure 97: View from Clock Tower Plaza. Regrouping plots, and pedestrianising streets allows for mixed use spaces that prioritise pedestrians, and facilitate flows and economic activity.

Diverse Functionality

The main aim of this strategy is to diversify the homogeneous identity of the inner core as a market place. This would open up the core to a variety of users, offer the community diverse amenities, as well as increases economic opportunity and livelihood.

Firstly, by increasing the residential capacity in the inner core to allow a larger fixed community to reside there. This would induce increased ownership of the place, as well as spark different functions to service the residents. In addition, it would also add safety to the streets at night by increasing occupancy of the area even when the shops close. The neighbours convening on their rooftops for evening tea, as one interviewee described, would liven the area and add eyes on the street. To accommodate for the increased capacity, a mixed building typology is proposed across the inner core, with commercial use on the ground floors, and the upper floors used for offices, services, and housing. The interior courtyard landscapes are renovated, and equipped with green space, as was the usual in the vernacular houses, and playgrounds.

The second approach is to dot different functions across the inner core, creating several attractor points that would be used by diverse people, at different times of the day. These include the public plazas and green space (see Figure 90 on page 145), complemented by the diverse program of the Knowledge Transfer and Skill Training Buildings (see Figure 101 on page 159), as well as the existing markets, religious buildings and schools. Essential to the success of the approach is that the services are accessible and connected, and that they are logically distributed to activate the proposed plazas and squares. In addition, the public realm allows and encourages informal vendors to also take their place within the inner core.

- Proposed Residential Blocks
- New Market Buildings
- Existing Bathhouse
- Adaptive Reuse of Juma'a House to new hotel
- Proposed & Existing Knowledge Transfer and Skill Training Buildings
- Existing Schools
- Existing Religious Buildings
- Public Space/Plazas
- Public Playgrounds
- Public Green Space

Figure 98: Existing and proposed functions

New buildings are proposed for the main markets: the second-hand market, and the Hisbeh fruit and vegetable market. The area around the second-hand market structure is rearranged, to include better access to the Crafts plaza, and an extra pedestrian entrance to the Tal. A new market building is proposed with underground parking to service it. As for the fruit and vegetable market, the concrete structure is to be demolished, to make space for the new main market square, equipped with a better structured building which opens up on the ground floor. This provides space for various happenings on the plaza, more space for the informal vendors, as well as induces further shops around the edges.

The proposal of a stable community, a diverse range of functions that attracts different people, and a public realm that connects them, and promotes various activities causes a synchronous space where there are many happenings at once, and induces a ripple effect of further businesses and economic opportunities to flourish.

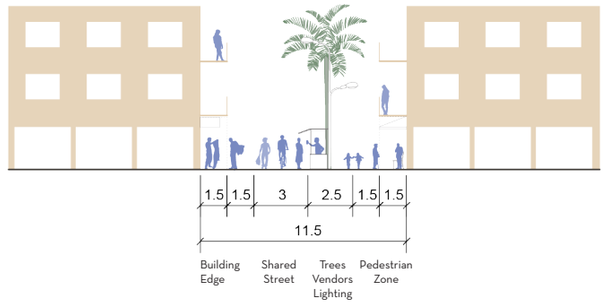


Figure 99: Shared pedestrian priority street, Ex.: Surrounding the proposed residential blocks. Multi-functional street, and stacking of functions in building typology with commerce on ground floor and residential upper floors. A space of 3m is kept clear for evening service car access.

Figure 100: Main Market Axo. Next Page

Knowledge Transfer and Skill Training

The Knowledge Transfer and Skill Training Facilities aim to increase platforms for the circulation of knowledge amongst the community. In addition, to provide a diverse cultural program that offers community activities and increases economic opportunity. It complements and strengthens the existing facilities, and historic buildings in the area.

1. One of the essential moves is the proposal of the Yarmouk university complex in the inner core. Attracting more students creates diversity and connection between the inner core and southern districts of the city. It also sparks a ripple effect around the inner core as a range of functions are initiated to service the students, increasing economic diversity. In addition, student activity in the centre will strengthen the transfer and application of knowledge for social learning.
2. Youth Centre, carefully placed in a location which aims to act as a bridge between the functions on the Tal, and the districts behind, namely the refugee camp. The centre would provide spaces, activities and different courses for the many youth in the area.
3. Crafts workshop and gallery space that opens up to the Crafts Plaza. The square is framed with existing carpentry and metal workshops, the Industrial school on the Tal, and the newly proposed youth centre. The skill training facilities are complimented with a platform, the plaza, for opportunities to connect and sell.
4. Women's centre and training facility is proposed in the Nabulsi House to strengthen women's inclusion in the inner core. It offers them a safe place to connect, and enables them through strengthening skills, and economic opportunity.
5. Community centre proposed in the currently empty land. It would offer community services, activities as well as meeting spaces.
6. Public Library proposed in the existing historic buildings. It complements the university complex, offering community spaces, and aims to diversify the commercial Hashimi street.
7. Cinema and Culture Centre proposed in the area of the demolished cinemas. It adds recreational community activities in a commercial area, and induces arts and cultural spaces in the inner core, especially with the new student users.

- Proposed Yarmouk University Complex
- Skill Training Facilities
- Cultural Program
- Public Libraries
- Existing Schools

Figure 101: Existing and Proposed Knowledge Transfer and Skill Training Buildings

Figure 102: View from Hashimi street towards the municipality building, and proposed public library

Conclusion

This thesis brings together the research on social resilience in the urban context, and its application within an urban design scope to the inner core of the city of Irbid. The aim of the thesis is to consolidate the research into a conceptual framework which can guide urban design processes for building social resilience. Consequently, to apply this framework to the inner core of the city of Irbid, first through a detailed analysis of place, then through urban design. The thesis emphasises the importance of social resilience for the resilience of socio-ecological at multiple scales. As well as the importance of assessing situations locally, and especially for urban design to be set in its context with a deep understanding of place, for building social resilience.

Conclusion

Witnessing the development of some cities in Jordan over the years, I became aware that certain urbanization trends did not stem from an understanding of the culture, nor did they in turn provide spaces in the city that promote access to resources, nor allow for societal development. Consequently, social divide, amongst many other issues, have been greatening. Not only do these issues affect the development of these cities, but they also play a role in global sustainability. I knew that my thesis would revolve around an urban development path for the city of Irbid, it took time, however, to consolidate it through the framework of social resilience.

The concept of social resilience brought together the matters that I wished to address through urban design. Social resilience is the capacity of societies to adapt to change, to transform and continue to develop. It recognises the interconnectedness of people and place, as well as the capacities of people to act. In addition, its attributes allow society to persevere through changing circumstances, transforming vulnerabilities into opportunities, both for ecological sustainability, and societal development. These notions are central to my interests, and upon which the main aim of the thesis is based, to find the link between social resilience and urban design, and applying the working methodologies to the inner core of Irbid.

Irbid is a developing city that is currently facing many changes. They include a range of environmental, social and economic changes that have put the urban environment under huge pressures of coping with the challenges, and continuing to support the population. Coupled with a lack of resources and proper urban planning, these challenges have resulted in an urban fabric which is neither sustainable, nor adequately supports societal development. The city of Irbid witnesses socio-spatial fragmentation, and in the inner core specifically; a built environment that prioritises cars over people causing a lack of a public sphere that promotes community connections and cohesion. The problems facing the city are multi-dimensional and can be assessed through a multitude of lenses. Concurrently, the choice of the theoretical lens of social resilience, directed the focus towards the connection between people and their environments, and a development that stems from an understanding of place.

In the first part of the thesis, I define the attributes of urban and social resilience, and discuss their intricacies within the urban fabric. Particularly, the six attributes of social resilience by Maclean et al. (2014) are strong guiding points that lead the following framework. As the concept of social resilience is very theoretical, political, and deeply rooted in the locale, it was a challenge to translate the knowledge into a method that can be applied through urban design. Social resilience is a broad and complex topic, therefore the focus of the theory chapter was to distil its main attributes and link them to the urban environment. Consequently, I emphasise the

relationship between communities and their environments, in this case the urban environment. I explain that they are mutually influencing and, importantly, how a sense of place and community affect people's belonging and participation, both essential for social resilience. Hence, the focus of the thesis developed into how the urban environment can be equipped to provide capacity giving assets that strengthen social resilience. Accordingly, these are interpreted in a conceptual framework that portrays the importance of place attachment, a sense of community, economic opportunity and social learning for a resilient society. The proposed framework then brings these notions together through tools and processes for urban design.

The analysis and design parts of the thesis then portray a working method of studying a specific context, and combining local knowledge of place with the conceptual framework in order to guide the design. The urban analysis of the inner core of Irbid defined the anchors of the place that were maintained and strengthened in the design part, in order to ensure a sense of place and connection. The weaknesses identified in the SWOT analysis, framed by the theory, were the needs that lead the design process. Accordingly, the final design proposed for the inner core of Irbid is rooted in place, works with existing strengths and weaknesses of the inner core, and above all, aims to build capacities for social resilience.

The process of design should, ideally, include collaborative efforts of participation as well as adaptive planning. In the fieldwork, through semi-structured interviews, I managed to get the opinions of a diverse range of people that I incorporated in the urban analysis and design. Nonetheless, because of limited time and resources, it was a small group of people that does not represent the opinions of all stakeholders. Therefore in the scope of the thesis, neither participatory design nor adaptive planning could be incorporated. These are essential to the strengthening of social resilience, however, and the resilience of urban environments. Therefore, any efforts to further develop and implement the design need to take them into consideration, finding ways to include the community and stakeholders in the design process. In addition to applying the design strategies incrementally, and in an iterative process of testing, evaluating and adapting plans along the way.

Achieving urban resilience is a multi-layered and multidisciplinary approach that encompasses different areas of knowledge. This thesis recognises the interdependence of socio-ecological systems, as societies are bound by their environment, and cannot thrive without the ecological systems within which they are intertwined. Therefore, the focus on social resilience does not undermine the importance of ecological resilience. It rather offers a complementary strategy for urban design that aims to strengthen a community's ability to act, in order to find creative ways of developing and living in harmony within the natural and built environments. Social resilience is strongly connected to the resilience to the whole urban system. Thus, some aspects of urban resilience were studied, in order to conceive of a framework that tackles social resilience in the urban context. A multidisciplinary approach that tackles not only the different scales of urban systems, but also holistically, is necessary for the success of our urban environments. Therefore this research works in a comprehensive manner only when complemented with other areas of knowledge that address urban ecological systems, urban metabolism, and economic models, to name a few.

This thesis sets forth a vision for the possibilities of urban development for the inner core of Irbid. There are many factors, however, that play a role in influencing the path for development of a city, most decisively, the policies and governance systems in place. The research describes the importance of building social resilience in urban environments, for the local population, as well as globally. For this to be achieved, coherent policies which support these comprehensive values and vision need to be developed. Above all, policies which aim for an inclusive public realm and access to resources, and initiatives which support economic opportunity as well as assets for social learning and skill training. Essential to transformations is work on multiple levels, from the bottom up and top down. In essence, creating urban environments which support the local communities and their needs, environmentally, socially and economically is a collaborative effort involving governing bodies, the community, as well as different stakeholders.

Way Forward

The thesis presents an in depth analysis of the inner core of Irbid. In architectural terms, little documents on the city of Irbid are available to the public. There are several books in Arabic documented by the municipality, in addition to some reports by academics in the field. It was difficult however to get access to information such as city maps, whether in CAD or images, since they not available for public access. Neither is much information on the city fabric, with the ones available being in a form that took time to decipher. It was also precisely for these reasons that it was important for me to produce material that coherently documents the history of the city, as well as an urban analysis of its current form, and thus demonstrate its potentials. The conceptual framework, the methodology of its application through analysis and design, as well as the design direction proposals offer a viable approach for the development of urban areas, that can be used, at least in part, in urban design projects in Irbid or elsewhere. I hope that this thesis inspires further studies on the city of Irbid, as well as instigates initiative from the municipality on different approaches to its urban development.

There are many potential studies that can be done which were beyond the scope of this thesis, but would complement and further develop the design proposed. Particularly, the development of the inner core on its own is not adequate, therefore a similar approach would have to be applied to the different areas of the city, and then holistically to ensure the connectivity and coherence of the whole. Further connectivity and accessibility studies can be undertaken, such as proper traffic planning including a functioning public transport systems, cycling lanes, and ensuring a pedestrian friendly infrastructure accompanied with walkability studies. Moreover,

feasibility studies for housing typologies in the inner core can be done, including land use policies that support mixed use neighbourhoods. In addition, the informal economy forms a big part of the inner core and is the basis of livelihood for many people. Studies on the informal economy, policies that support and integrate it are needed, to avoid the constant friction that currently takes place. Above all, green area planning, as well as hybrid ecological models for urban design are essential for the city of Irbid. It is vital to address the ecological issues the city faces at different scales for safeguarding the ecological foundation and sustainability of the city. Ideally all these layers should work together, in compatible ways to form a coherent whole.

Working on this thesis has been a long and challenging journey through which I have had a steep learning curve. I hope that this thesis in some parts acts as an ode to the city of Irbid. I wish to portray the city as it is, and bring out the kind simplicity of the place and its people. I also hope that the thesis, in the least, spurs visions and conversation about the possible futures for the city and its inner core. Through the combined approach of local analysis and social resilience, I hope to bring out the possibilities of bridging the traditional and the modern cultures that conflict. To show that there is place for both in the city, on one hand through an appreciation of the existing culture and on the other through opening the city to diversity. Saskia Sassen (Guadalupe, 2013) describes an incomplete city as one that keeps reinventing itself. Constant change is a reality, and challenges at all scales will not cease to arise, so above all, I wish to emphasise importance of an equipped society that can deal with change, and embrace uncertainty.

I Dream of a City

"I dream of a city that nurtures our ambitions instead of slaying them in the womb. A city where racism has no place, and indifference is an impossible word.

I dream of a city where all women can walk without fear, dream without boundaries, and achieve without barriers. A city where men defend equal opportunities more vehemently than I do, and take pride in having capable partners instead of trophy wives.

I dream of a city with green spaces, sustainable energy and decent souls. A city where we'd finally have electricity 24/7, wouldn't need to buy water and in which roads wouldn't become blocked every time it rains. A city whose citizens stop at red lights, sort their waste, and hold their leaders accountable.

I dream of a city where creativity is more valued than mischievousness, critical minds more than blind allegiances, real merits more than influential connections, and human ethics more than bank accounts. Where politicians actually serve the interests of their people, and where deputies are chosen for their competence and integrity, not for their religious affiliations.

I dream of a city that stands by its wronged, defends its victims, and cares for its underprivileged. A city that admits its mistakes instead of denying them, and punishes violence instead of glorifying it.

I dream of a city that my youngest son would not want to leave, and that my eldest would want to return to."

- Joumana Haddad (in the Guardian, 2016)

The dreams Joumana describes of her city resonate greatly with my feelings for Irbid, Amman, and most cities in Jordan. In her description she demands social agency, freedom and opportunity. She engages people and their environments, demanding a sustainable city which supports livelihoods, as well as a society that cares for their environment. A city that is just, representative of its community, and above all, one which induces belonging, and opportunities for development.

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